FRONT ELEVATION:

PREPARED FOR:

8456 SE 40TH RESIDENCE

PROJECT DATA:

PARCEL NO.:	502190-0790	DESIGN TEAM:	URBAN DESIGN GROUP 15445 53rd AVE. S. STE. 110 TUKWILA, WA 98188 (206) 838-8250 urbandesigncenter@yahoo.com CONTACT: PAVEL MELNIK
PROPERTY TYPE:	R, RESIDENTIAL		
LAND AREA:	11, 930 S.F.		
ACRES:	0.27		
Q,S,T,R:	SW-T -24-5		
ADDRESS:	8456 SE 40TH MERCER ISLAND, WA 98040	STRUCTURAL ENGINEER:	NN ENGINEERING P.O. BOX 39681 LAKEWOOD, WA 98499 (253) 250-6651 NNENGINEERING@COMCAST.NET CONTACT: NORM P. NAVARRO
ZONE:	R-8.4		
SETBACKS:	FRONT: 20 FEET REAR: 25 FEET SIDE: 5 FT. MIN.		
MAX HEIGHT:	30 FEET		
WATER:	WATER DISTRICT	OWNER:	PHILIP SUDO Q LLC mackuntu@gmail.com laurieyang92@gmail.com CONTACT: KUN QIAN & LAURIE QIAN
SEWER/SEPTIC:	PUBLIC		
ROAD ACCESS:	PUBLIC		
STREET SURFACE:	PAVED		

FRONT/RIGHT ELEVATION:

REAR/LEFT ELEVATION:

SHEET #	
A0	COVER
1 OF 1	BOUNDARY/TOPOGRAPHIC SURVEY
SITE	ARCHITECTURAL SITE PLAN
T1	TREE PROTECTION PLAN
	CIVIL ENGINEERING
C1	DRAINAGE SITE PLAN
C2	DRAINAGE DETAIL
C3	TESC/DEMO/CSWPPPTION DETAIL
	ARCHITECTURAL PLAN
A1.1	GENERAL NOTES AND PLAN PREVIEW
A1.2	ENERGY CREDITS OPTIONS
A2.1	GROSS FLOOR AREA (GFA)
A2.2	PARKING
A3	MAIN FLOOR PLAN
A4	UPPER FLOOR PLAN
A5	FRONT AND REAR ELEVATIONS
A6	LEFT AND RIGHT ELEVATIONS
A7	PERSPECTIVE VIEWS
A8	BUILDING CROSS-SECTION AND DETAILS
A9	ROOF LAYOUT
A10	SCHEDULES AND NOTES
A11	DETAILS
A12	PROJECT DETAILS
A13	HARDIE PANEL SIDING DETAILS
A14	ARTISAN LAP SIDING DETAILS
	STRUCTURAL PLAN
S1.1	GENERAL NOTES
S1.2	GENERAL NOTES
S2	FOUNDATION DETAILS
S3	FRAMING DETAILS
S4	FOUNDATION/ FLOOR FRAMING
S5	UPPER FLOOR FRAMING
S6	ROOF FRAMING

3D RENDERING NOTES:

3D ELEVATIONS ARE FOR REFERENCE ONLY. THESE SHOULD NOT BE USED TO DETERMINE ANY PORTION OF THE CONSTRUCTION OTHER THAN GENERAL MATERIAL AND APPEARANCE. REFER TO ELEVATION SHEETS FOR DETAILS.

PROJECT DESCRIPTION:

SINGLE FAMILY RESIDENCE (4 016 S.F.) AND ATTACHED 2-CAR GARAGE (500 S.F.).

BUILDING DEPARTMENT NOTES:

THE INSTALLATION OF A NFPA 13D FIRE SPRINKLER SYSTEM. THIS WILL REQUIRE A SEPARATE PERMIT, BUT MAY BE DEFERRED BY CITY AFTER FULL REVIEW.

REAR ELEVATION:

URBAN DESIGN GROUP
15445 53 RD AVE. S. STE. 110 TUKWILA, WA 98188
(206) 838-8250 E-MAIL: URBANDESIGNCENTER@YAHOO.COM

PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022
DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:

COVER SHEET

PROJECT NUMBER:
21257

SHEET NUMBER:
A0

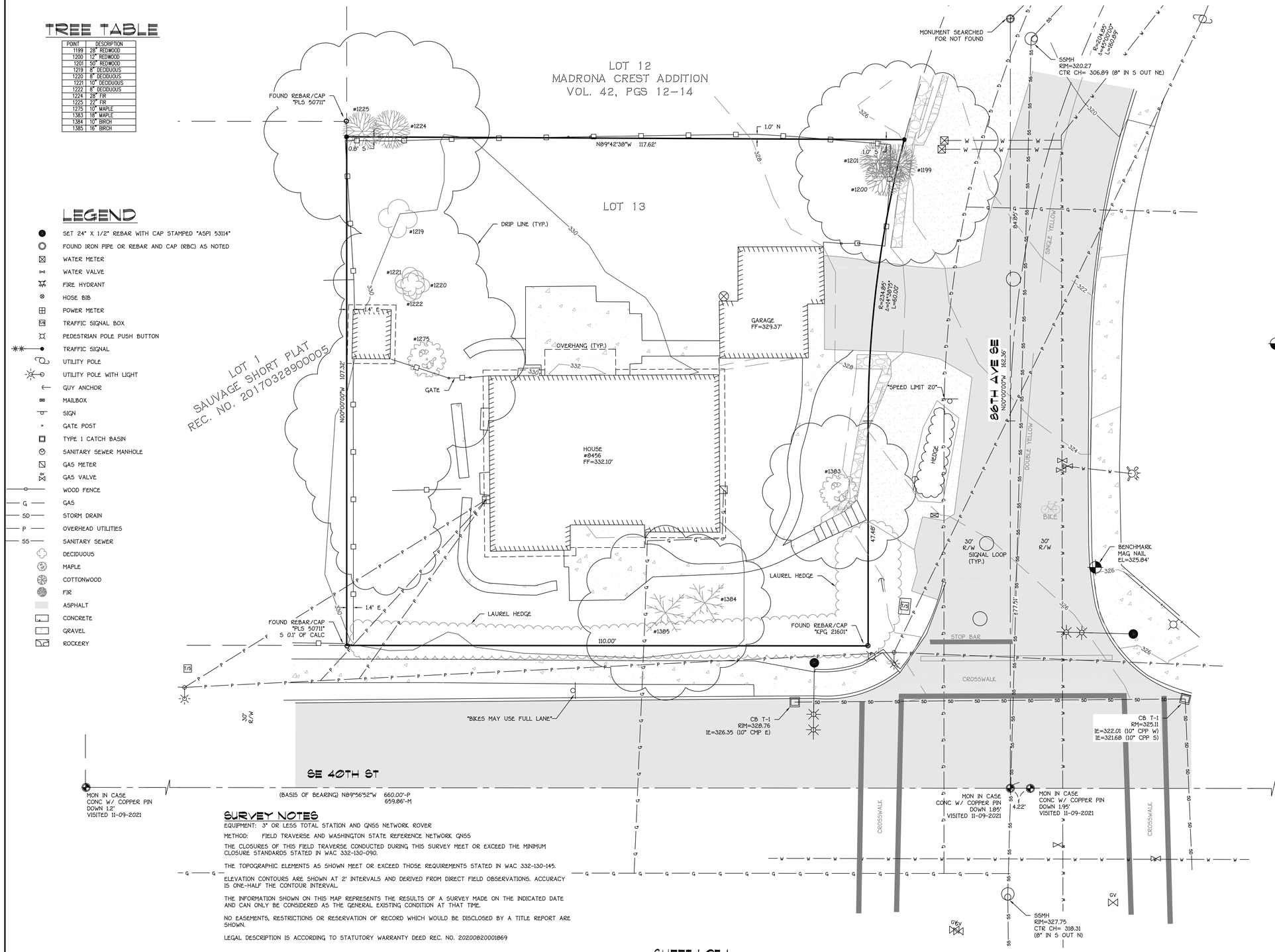
A PORTION OF THE SW 1/4, SW 1/4 OF SECTION 7, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M.

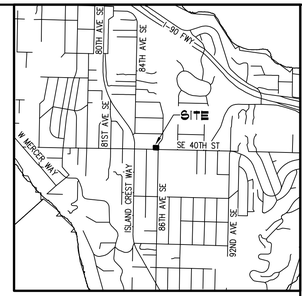
TREE TABLE

POINT	DESCRIPTION
1199	28" REDWOOD
1200	12" REDWOOD
1201	50" REDWOOD
1219	8" DECIDUOUS
1220	8" DECIDUOUS
1221	10" DECIDUOUS
1222	8" DECIDUOUS
1224	28" FIR
1225	22" FIR
1275	10" MAPLE
1383	18" MAPLE
1384	10" BIRCH
1385	16" BIRCH

LEGEND

- SET 24" X 1/2" REBAR WITH CAP STAMPED "ASPI 53114"
- FOUND IRON PIPE OR REBAR AND CAP (RBC) AS NOTED
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- HOSE BIB
- POWER METER
- TRAFFIC SIGNAL BOX
- PEDESTRIAN POLE PUSH BUTTON
- TRAFFIC SIGNAL
- UTILITY POLE
- UTILITY POLE WITH LIGHT
- GUY ANCHOR
- MAILBOX
- SIGN
- GATE POST
- TYPE 1 CATCH BASIN
- SANITARY SEWER MANHOLE
- GAS METER
- GAS VALVE
- WOOD FENCE
- GAS
- STORM DRAIN
- OVERHEAD UTILITIES
- SANITARY SEWER
- DECIDUOUS
- MAPLE
- COTTONWOOD
- FIR
- ASPHALT
- CONCRETE
- GRAVEL
- ROCKERY





VICINITY MAP

SCALE: 1" = 2,000'

LEGAL DESCRIPTION

LOT 13, BLOCK 7, MADRONA CREST ADDITION, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 42 OF PLATS, PAGE 12 THROUGH 14, IN KING COUNTY, WASHINGTON.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARING

S89°56'52"E BETWEEN FOUND MONUMENTS ALONG CENTERLINE OF SE 40TH ST ACCORDING TO THE PLAT OF MADRONA CREST REFERENCED HEREON.

DATUM
BENCHMARK

MAG NAIL LOCATED ON EAST SIDE OF 86TH AVE SE, 0.5' EAST OF BACK OF CURB AND 5.5' WEST OF ANGLE POINT IN BACK OF SIDEWALK.

ELEV. = 325.84'

ELEVATION ESTABLISHED BY GPS OBSERVATIONS UTILIZING THE WASHINGTON STATE REFERENCE NETWORK.

SURVEY REFERENCES

P- MADRONA CREST ADDITION, RECORDED IN VOLUME 42, PG. 12 OF PLATS
SHORT PLAT AF# 20170328900005
R- RECORD OF SURVEY AF# 20140213900001

UTILITY NOTES

BASIS FOR UTILITY LINES SHOWN:
FIELD OBSERVATIONS & AS-BUILT MAPS

IN PROVIDING THIS SURVEY, NO ATTEMPT HAS BEEN MADE TO OBTAIN OR SHOW DATA CONCERNING CONDITION OR CAPACITY OF ANY UTILITY EXISTING ON THIS SITE, WHETHER PRIVATE, MUNICIPAL OR PUBLIC OWNED.

UTILITIES OTHER THAN THOSE SHOWN MAY EXIST ON THE SITE. UNDERGROUND UTILITY LOCATIONS SHOWN HEREON ARE TAKEN FROM A COMPILATION OF PUBLIC RECORDS AND VISIBLE FIELD EVIDENCE. WE ASSUME NO LIABILITY FOR THE ACCURACY OF THE PUBLIC RECORDS. UNDERGROUND UTILITY LOCATIONS ARE ONLY APPROXIMATE. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN VISIBLE SURFACE LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. FIELD VERIFICATION IS NECESSARY PRIOR TO OR DURING ANY CONSTRUCTION.

SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT SURVEYED OR EXAMINED OR CONSIDERED AS PART OF THIS SURVEY. NO EVIDENCE OR STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONDITIONS, CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS PROPERTY.

SURVEY NOTES

EQUIPMENT: 3" OR LESS TOTAL STATION AND GNSS NETWORK ROVER

METHOD: FIELD TRAVERSE AND WASHINGTON STATE REFERENCE NETWORK GNSS

THE CLOSURES OF THIS FIELD TRAVERSE CONDUCTED DURING THIS SURVEY MEET OR EXCEED THE MINIMUM CLOSURE STANDARDS STATED IN WAC 332-130-090.

THE TOPOGRAPHIC ELEMENTS AS SHOWN MEET OR EXCEED THOSE REQUIREMENTS STATED IN WAC 332-130-145.

ELEVATION CONTOURS ARE SHOWN AT 2' INTERVALS AND DERIVED FROM DIRECT FIELD OBSERVATIONS. ACCURACY IS ONE-HALF THE CONTOUR INTERVAL.

THE INFORMATION SHOWN ON THIS MAP REPRESENTS THE RESULTS OF A SURVEY MADE ON THE INDICATED DATE AND CAN ONLY BE CONSIDERED AS THE GENERAL EXISTING CONDITION AT THAT TIME.

NO EASEMENTS, RESTRICTIONS OR RESERVATION OF RECORD WHICH WOULD BE DISCLOSED BY A TITLE REPORT ARE SHOWN.

LEGAL DESCRIPTION IS ACCORDING TO STATUTORY WARRANTY DEED REC. NO. 20200820001869

SITE DATA

SITE ADDRESS: 8456 SE 40TH ST, MERCER ISLAND, WA 98040
TAX PARCEL NUMBER: 502190-0790
GROSS SITE AREA: 11,930 SF (0.27 ACRES)

SHEET 1 OF 1

REVISIONS:

6-23-2022

ASPI, LLC
LAND SURVEYING AND PLANNING
5205 & 2ND AVE SUITE A
EVERETT, WA 98203
(425) 257-1804

BOUNDARY/TOPOGRAPHIC SURVEY FOR LAURIE TANG

PORTION OF SW 1/4 SW 1/4 OF SECTION 7, TOWNSHIP 24 NORTH, RANGE 05 EAST, W.M.
CITY OF MERCER ISLAND
KING COUNTY, WASHINGTON

DRAWN BY: NJT
DATE: 10/09/2021
PROJECT NO. 21-514
SHEET NO. 1 OF 1

1 VICINITY MAP N.T.S.

ZONING INFORMATION:

PARCEL NO.:	502190-0790
PROPERTY TYPE:	R, RESIDENTIAL
LAND AREA:	11,930 sq. ft.
ACRES:	0.27
Q.S.T.R.:	SW-7 -24-5
ADDRESS:	8456 SE 40TH ST MERCER ISLAND, WA 98040
ZONING:	R-8.4
SETBACKS:	FRONT: 20 FEET REAR: 25 FEET SIDE: 17% OF THE LOT WIDTH OR 18.24' (107.32 X 17% = 18.24)
MAX. HEIGHT:	30 FEET
MAX. LOT COVERAGE:	40% (PERCENT)
WATER:	WATER DISTRICT
SEWER/SEPTIC:	PUBLIC
ROAD ACCESS:	PUBLIC
STREET SURFACE:	PAVED

LOT COVERAGE CALCULATION

11,930 S.F.	TOTAL LOT AREA
3,019 S.F.	BUILDING STRUCTURE W/ COVERED PORCH, CANTILEVERS AND ROOF OVERHANGS
224 S.F.	COVERED PATIO
813 S.F.	CONCRETE DRIVEWAY
4,056 S.F./33.99%	TOTAL LOT COVERAGE (MAX 40%)

HARDSCAPE CALCULATION

11,930 S.F.	TOTAL LOT AREA
9 S.F./0.075%	CONCRETE STOOP (MAX 9%)

GROSS FLOOR AREA:

LOT AREA: 11 930 s.f.
ALLOWED GFA *: 40%
GFA W/ALLOWANCE (40%): 4 772 s.f.

MAIN FLOOR:	2 015 S.F.
GARAGE:	500 S.F.
UPPER FLOOR:	2 255 S.F.
STAIRCASE:	EXCLUDED
TOTAL GROSS FLOOR AREA (GFA):	4 770 S.F. / 39.98%

HEIGHT CALCULATION:

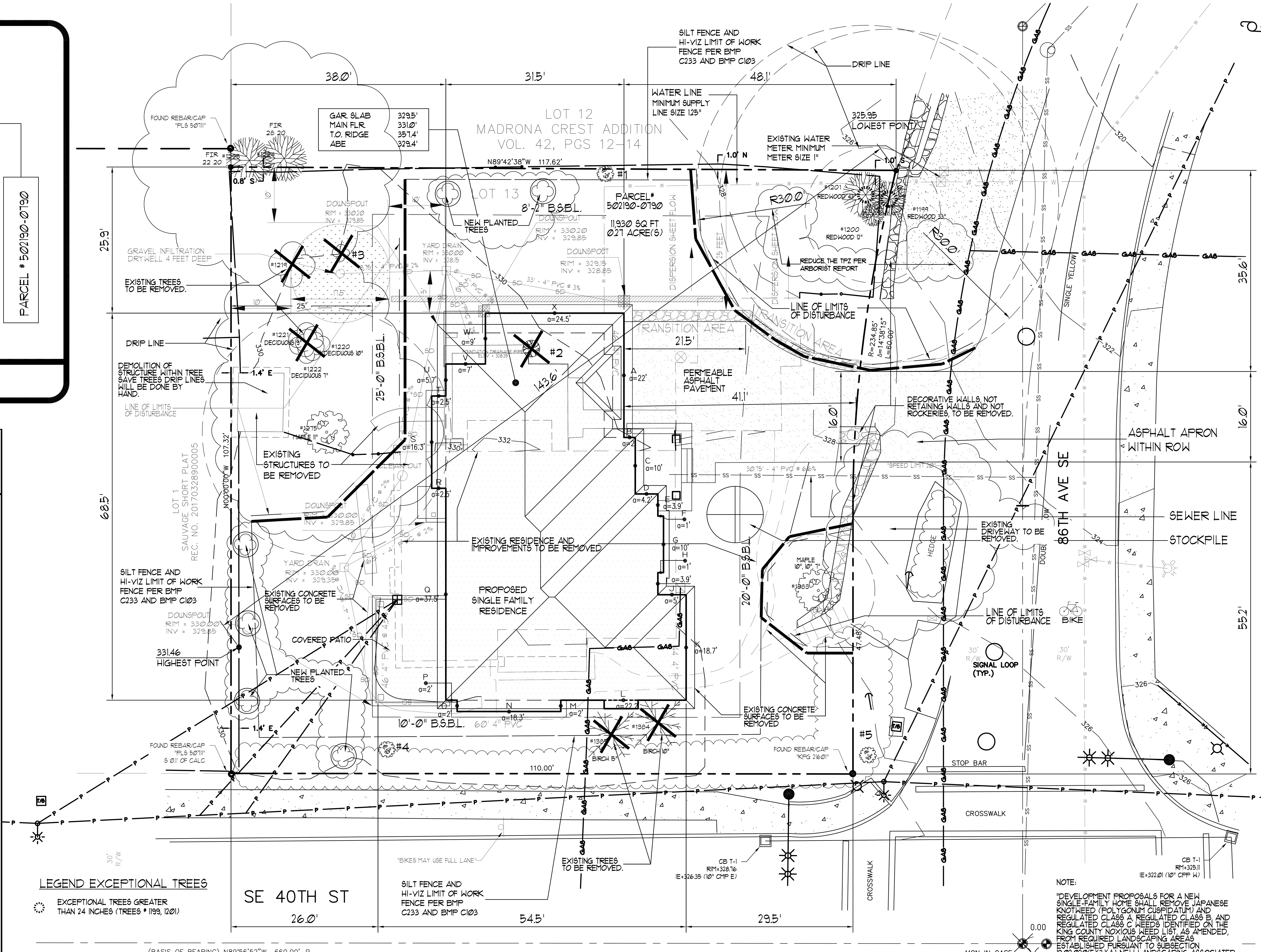
PT.	MID. PT. HT	Wall SEGMENT LENGTH	RESULT
A	329.3	22	7244.6
B	329.3	2	658.6
C	329.3	10	3293
D	329.3	4.2	1383.06
E	329.3	3.9	1284.27
F	329	1	329
G	329	10	3290
H	329	1	329
I	329	3.9	1283.1
J	329	5	1645
K	329	18.7	6152.3
L	329.5	22.2	7314.9
M	329.5	2	659
N	329.5	18.3	6029.85
O	329.5	2	659
P	329.5	2	659
Q	329.5	37.5	12356.3
R	329.5	2.5	823.75
S	329.5	16.3	5370.85
T	329.5	2.5	823.75
U	329.5	5.7	1878.15
V	329.5	7	2306.5
W	329.5	9	2965.5
X	329.5	24.5	8072.75
TOTAL		233.2	76811.2
ABE			329.379

TREE TABLE (ON SITE TREES)

POINT	DESCRIPTION	REMAIN?
1200	REDWOOD 12" 14'	YES
1201	REDWOOD 50" 16'	YES
1219	DECIDUOUS 8" 10'	YES
1220	DECIDUOUS 8" 10'	YES
1221	DECIDUOUS 10" 16'	YES
1222	DECIDUOUS 8" 12'	YES
1275	MAPLE 10" 20'	YES
1383	MAPLE 18" 16'	YES
1384	BIRCH 10" 14'	NO
1385	BIRCH 16" 18'	NO

TREE TABLE (NEIGHBORING TREES)

POINT	DESCRIPTION	REMAIN?
1199	REDWOOD 28" 22'	YES
1224	FIR 28" 20'	YES
1225	FIR 22" 20'	YES



LEGEND EXCEPTIONAL TREES

EXCEPTIONAL TREES GREATER THAN 24 INCHES (TREES # 1199, 1201)

TREE PROTECTION INFORMATION SEE SHEET T1.

LOT SLOPE CALCULATIONS

Highest Elevation Point of Lot:	331.46	Feet
Lowest Elevation Point of Lot:	325.95	Feet
Elevation Difference:	5.51	Feet
Horizontal Distance Between High and Low Points:	143.6	Feet
Lot Slope*	3.83	%

*Lot slope is the elevation difference divided by horizontal distance multiplied by 100.

REDUCE THE TPZ PER ARBORIST's TREE PROTECTION PLAN

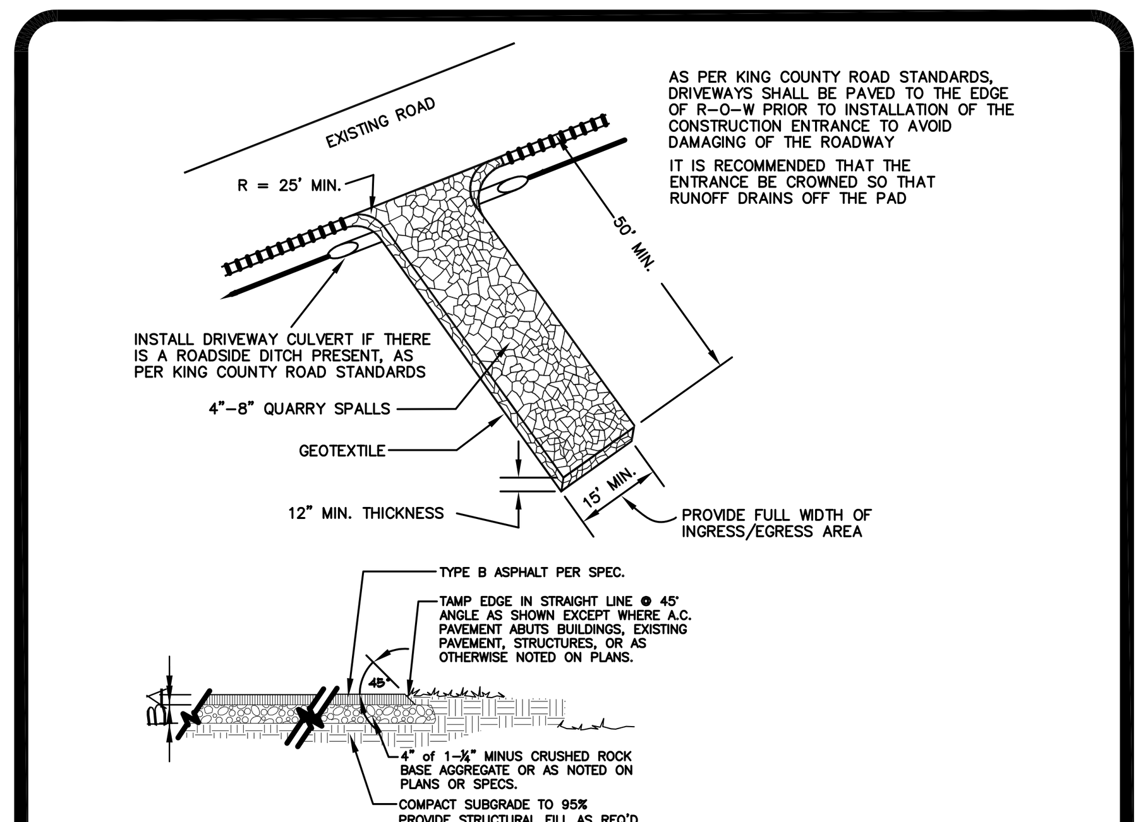
THE SIGNIFICANT ONSITE TREES WERE TAGGED WITH NUMBERS CORRESPONDING TO THE NUMBERS LISTED IN THIS REPORT. REFER TO ATTACHMENT 1, SITE IMAGES, FOR AN ORIENTATION TO THE SITE AND THE APPROXIMATE LOCATION OF THE TREES. THERE WERE A TOTAL OF 8 REGULATED TREES AND 5 UNREGULATED TREES ON THE PROPERTY. ACCORDING TO THE DPD DIRECTOR'S RULE 16-2008 THERE WERE TWO EXCEPTIONAL TREES ON THE PROPERTY, TREES LABELED 1199 AND 1201. EXCEPTIONAL TREES WILL BE MARKED WITH AN * FOLLOWING THEIR CORRESPONDING NUMBER. TWO TREES, LABELED 1384 AND 1385, WOULD CONFLICT WITH THE PROPOSED WORK AND ARE PROPOSED FOR REMOVAL. THE TWO TREES TO BE REMOVED ARE BOTH IN POOR HEALTH DUE TO BRONZE BIRCH BORER DAMAGE AND SEVERE PRUNING. NO ADJACENT TREES WILL BE AFFECTED BY THE REMOVAL OF THESE TREES.

- TREE #1201* HAS A TPZ THAT WILL LIKELY INTERFERE WITH CONSTRUCTION ACTIVITIES. TO THE SOUTH OF THE TREE, THE TPZ WILL BE REDUCED BY 30%. THIS WOULD REDUCE THE TPZ FROM 43' TO 30'. ANY EXCAVATION DONE WITHIN THE TPZ ZONES SHALL BE DONE WITH HAND TOOLS AND A CONSULTING ARBORIST ON SITE.
- TREE #1199* HAS A TPZ THAT WILL LIKELY INTERFERE WITH THE CONSTRUCTION OF THE DRIVEWAY. TO THE SOUTH OF THE TREE, THE TPZ WILL BE REDUCED BY 10% TO MATCH TREE #1201'S TPZ. THIS WOULD REDUCE THE TPZ ON THE SOUTH SIDE OF THE TREE FROM 33' TO 30'. ANY EXCAVATION DONE WITHIN THE TPZ ZONES SHALL BE DONE WITH HAND TOOLS AND A CONSULTING ARBORIST ON SITE.

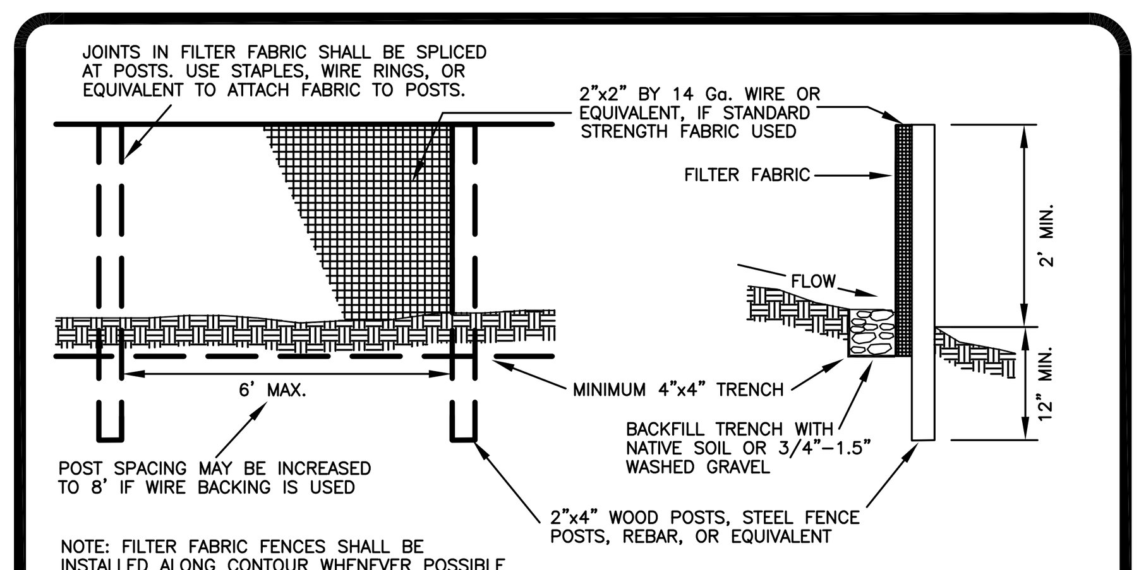
TO AVOID ANY CONFLICTS OF INTEREST, EASTSIDE TREE WORKS WILL NOT BE PERFORMING ANY TREE REMOVALS ASSOCIATED WITH THIS CONSTRUCTION PROJECT.

NOTE:

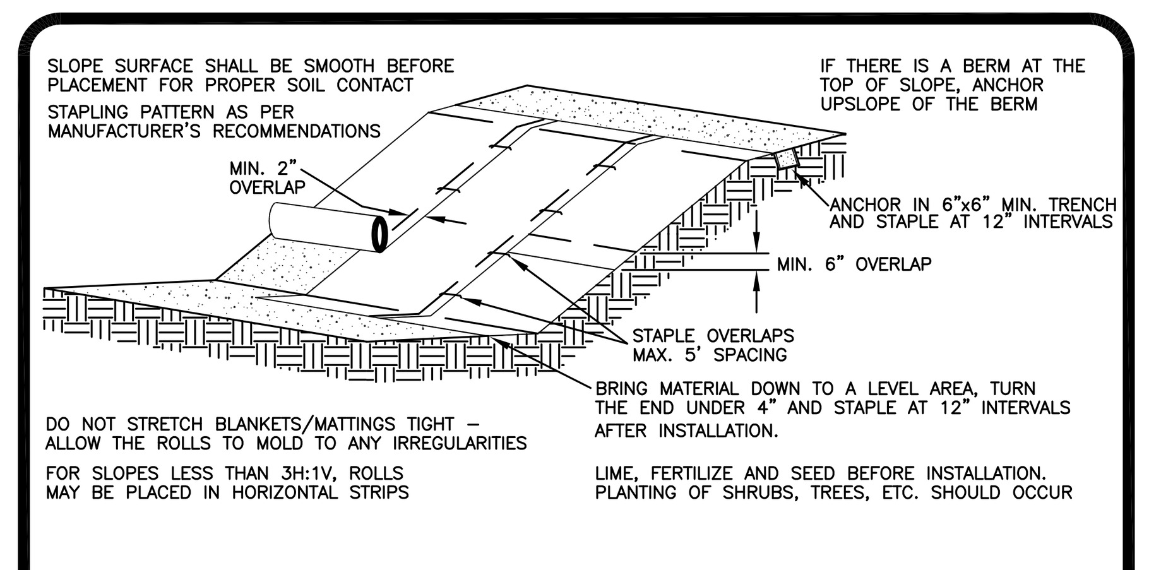
"DEVELOPMENT PROPOSALS FOR A NEW SINGLE-FAMILY HOME SHALL REMOVE JAPANESE KNOTWEED (POLYGONUM CUSPIDATUM) AND REGULATED CLASS A, REGULATED CLASS B, AND REGULATED CLASS C WEEDS IDENTIFIED ON THE KING COUNTY NOXIOUS WEED LIST, AS AMENDED, FROM REQUIRED LANDSCAPING AREAS ESTABLISHED PURSUANT TO SUBSECTION 19.02.020(F)(3)(A). NEW LANDSCAPING ASSOCIATED WITH NEW SINGLE-FAMILY HOME SHALL NOT INCORPORATE ANY WEEDS IDENTIFIED ON THE KING COUNTY NOXIOUS WEED LIST, AS AMENDED. PROVIDED, THAT REMOVAL SHALL NOT BE REQUIRED IF THE REMOVAL WILL RESULT IN INCREASED SLOPE INSTABILITY OR RISK OF LANDSLIDE OR EROSION."



2 CONSTRUCTION ENTRANCE N.T.S.



3 SILT FENCE



4 GROUND COVER

DRAINAGE DESIGN PROVIDED BY
SKYGATE ENGINEERS AND CONSULTANTS LLC,
KERELLOS YOUSSEF, P.E.
21619 36TH DR SE
BOTHELL WA, 98021
PH: (425) 623-4619
kerellos@skygatengineering.com

LEGAL DESCRIPTION:

MADRONA CREST ADD
PLat Block: 7
Plat Lot: 13

SITE PLAN

SCALE: 1' = 10'-0"

Project
SINGLE -FAMILY RESIDENCE
PARCEL#: 502190-0790
8456 SE 40TH
MERCER ISLAND, WA 98040

Prepared for
KUN QIAN &
LAURIE QIAN

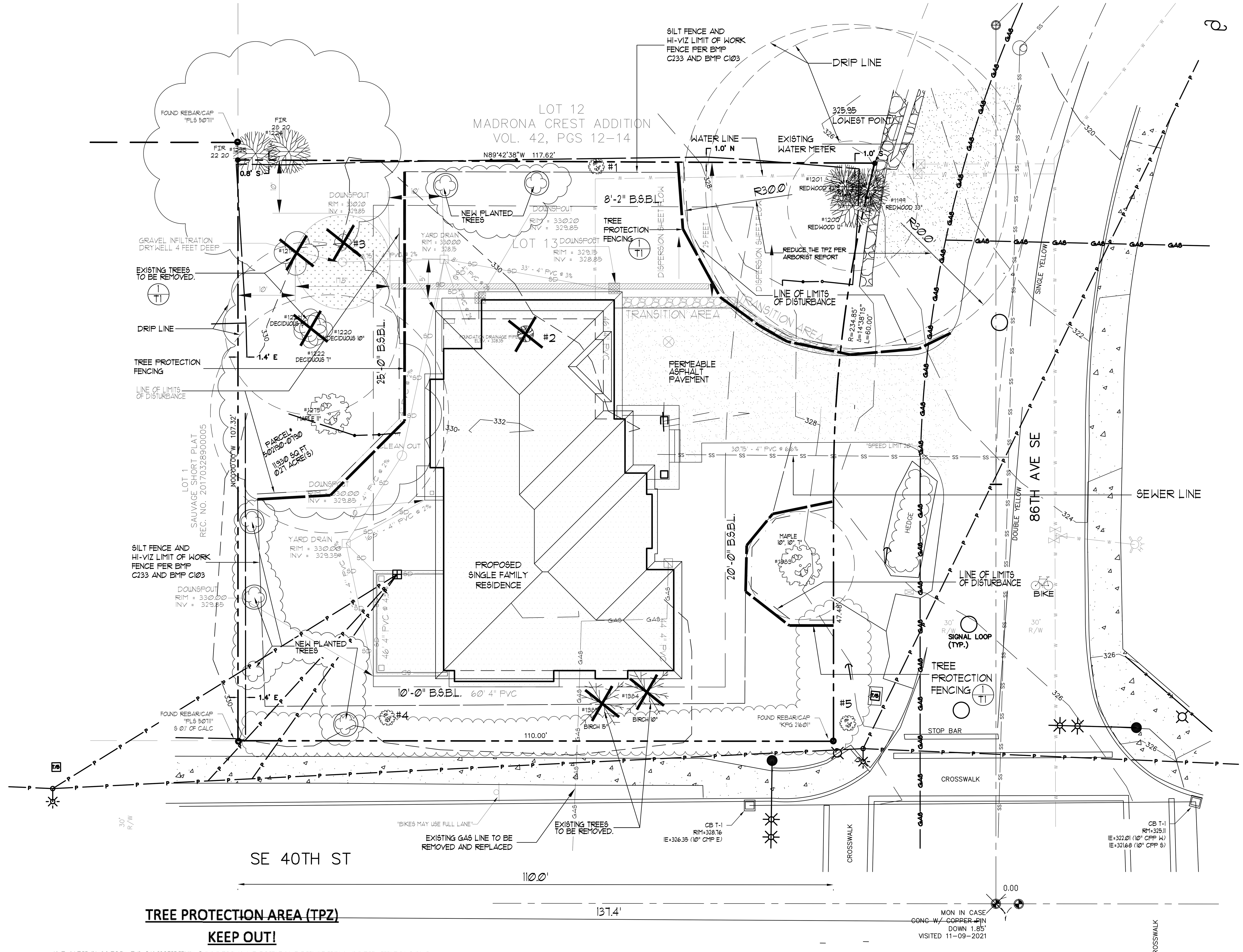
URBAN DESIGN GROUP
15445 53rd AVE. S, STE. 110 SEATTLE, WA 98188
(206)838-8250 E-mail: urbandesigncenter@yahoo.com
PO BOX 58306 Tukwila WA 98138

PLAN ISSUE: 06/21/2022
DESIGN BY: IVAN SHVETS
ENGINEER:
REV. DATE:
COMMENTS:
PLOT DATE: 10-09-2023

Project #: 21257
Sheet SITE

Tree #	Species	Latin Name	DBH	Appr Ht	Health	Dripline Radius	TPZ Radius [ft]	CRZ Radius [ft]	Exceptional	Regulated	Retain
1199*	Redwood	*(Sequoia sempervirens)*	33"	95'	Very Good	20'	33	16.5	Yes	Yes	Yes
The tree is perched on top of a small stone retaining wall at the northeast corner of the property. There is a small fence that is growing against the trunk at the root flare. This tree is part of a cluster of 3 Redwood trees.											
1200	Redwood	*(Sequoia sempervirens)*	12"	35'	Good	17'	12	6	No	Yes	Yes
The tree is located at the northeast corner of the property. This tree is growing subdominantly under 2 larger Redwood trees.											
1201*	Redwood	*(Sequoia sempervirens)*	43"	100'	Very Good	19'	43	26.5	Yes	Yes	Yes
This tree is located at the northeast corner of the property amongst a cluster of 3 Redwood trees.											
1220, 1221 and 1222	Mountain ash	*(Sorbus americana)*	15"	40'	Fair	16'	10	5	No	Yes	No
The tree is located approximately 30' south of the northwestern corner of the property and approximately 12' from the west wall											
1275	Japanese maple	*(Acer palmatum)*	11"	30'	Good	22'	11	5.5	No	Yes	Yes
This tree is located approximately 15' west of the northwest corner of the house.											
1383	Japanese maple	*(Acer palmatum)*	10", 10", and 7"	20'	Very Good	19'	10	5	No	Yes	Yes
This tree is located approximately 25' east of the southeast corner of the house.											
1384	Paper birch	*(Betula papyrifera)*	10"	20'	Poor	8'	10	5	No	Yes	No
This tree is located approximately 15' south of the southeast corner of the house.											
1385	Paper birch	*(Betula papyrifera)*	15"	20'	Poor	15'	15	7.5	No	Yes	No
This tree is located approximately 15' south of the front door at the south end of the house.											
1	Big leaf maple	*(Acer macrophyllum)*	4"	15'	Good	6'	4'	2'	No	No	Yes
Located the middle of the property at the border.											
2	Black cottonwood	*(Populus trichocarpa)*	5"	15'	Fair	6.5'	5'	2.5	No	No	No
Located at the northeast corner of the back porch.											
3	Magnolia	*(Magnolia acuminata)*	5"	15'	Fair	12'	5'	2.5'	No	No	No
Located at the northeast corner of the property.											
4	Japanese Maple	*(Acer palmatum)*	5"	15'	Fair	11'	5'	2.5'	No	No	Yes
Located at the Southeast corner of the house.											
5	Big leaf maple	*(Acer macrophyllum)*	4"	20'	Fair	12'	10'	5'	No	No	Yes
Big leaf maple cluster with the largest trunks being approximately 4" DBH. Located at the Southeast corner of the property mostly in the right of way											

TREE INVENTORY SUMMARY
(PER ARBORIST REPORT)



TREE PROTECTION AREA (TPZ)

KEEP OUT!

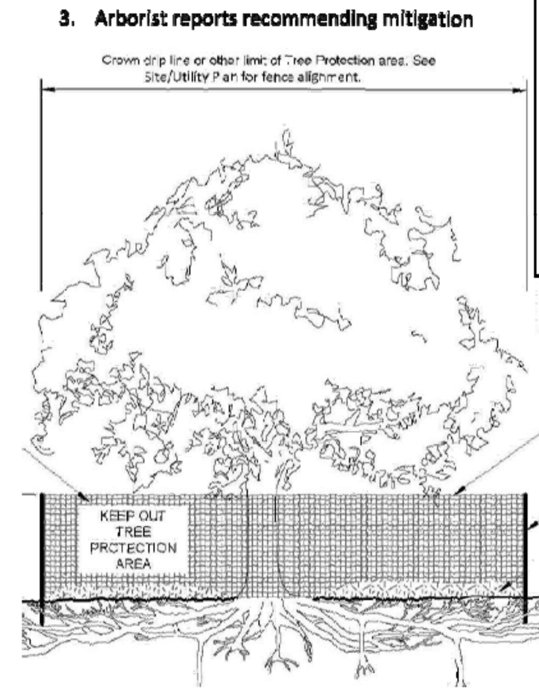
DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

Trees enclosed by this fence are protected and are subject to the conditions of the tree permit. Violation of tree conditions may lead to:

1. Correction Notices or Stop Work Orders until compliance is achieved
2. RE Inspection Fees
3. Arborist reports recommending mitigation

Notes

1. No pruning shall be preformed unless under the direction of an arborist
2. No equipment shall be stored or operated inside the protective fencing including during fence installation and removal
3. No storage of materials shall occur inside the protective fencing
4. Refer to Site/Utility Plan for allowable modifications to the tree protection area.
5. Unauthorized activities in tree protection area may require evaluation by private arborist to identify impacts and mitigation required
6. Exposed roots: For roots > 1" damaged during construction, make a clean straight cut to remove damaged portion and inform City Arborist



Tree protection fence: 4-6" chain link fence, solidly anchored into the ground, or if authorized High-density polyethylene fencing with 3.5" x 1.5" openings; color orange. Steel posts installed at 8' o.c.

2" x 6" steel posts or approved equal

Maintain existing grade with the tree protection fence unless otherwise indication on the plans

Any Work in the protected area must be with the permission of the City Arborist john.kenney@mercergov.org

(1) TREE PROTECTION ZONE (TPZ)

RZC 21.72.060 (A) (1) TREE RETENTION / RZC 21.72.080 (B) TREE REPLACEMENT

19.10.060 (A)(2) In all developments a minimum of 30% of all significant trees shall be retained over a rolling 5 year period.
19.10.070 Significant trees shall be replaced as followed:

- 1:1. for trees less than 10 inches in diameter.
- 1:2 for trees 10-24" in diameter.
- 1:3 for trees 24-36" in diameter.
- 1:6 for trees greater than 36" in diameter

	Total Trees	Hazard Non-Viable	Trees Retained	Significant Tree Removed	Replacement Ratio	Required Replanting
Less than 10"	0	0	0	0	1:1	0
10-24"	6	0	3	3	1:2	6
24-36"	1	0	1	0	1:3	0
+36"	1	0	1	0	1:6	0
	Viable Trees		**Retained**	**Percent**		**Total Replanting**
	8		5	5/8=63%		6

Replacement trees shall be primarily native species.
a. Two-and-one-half-inch caliper for deciduous trees.

Minimum size for replacement trees:
b. Six feet in height for evergreen trees.

Tree Retention: 5/8 = 63%.
3 significant trees are proposed to be removed.

Replacement trees required: 6

LEGEND EXCEPTIONAL TREES

EXCEPTIONAL TREES GREATER THAN 24 INCHES (TREES # 1199, 1201)

REDUCE THE TPZ PER ARBORIST's TREE PROTECTION PLAN

THE SIGNIFICANT ONSITE TREES WERE TAGGED WITH NUMBERS CORRESPONDING TO THE NUMBERS LISTED IN THIS REPORT. REFER TO ATTACHMENT 1, SITE IMAGES, FOR AN ORIENTATION TO THE SITE AND THE APPROXIMATE LOCATION OF THE TREES. THERE WERE A TOTAL OF 8 REGULATED TREES AND 5 UNREGULATED TREES ON THE PROPERTY. ACCORDING TO THE DPD DIRECTOR'S RULE 16-2008 THERE WERE TWO EXCEPTIONAL TREES ON THE PROPERTY, TREES LABELED 1199 AND 1201. EXCEPTIONAL TREES WILL BE MARKED WITH AN * FOLLOWING THEIR CORRESPONDING NUMBER. TWO TREES, LABELED 1384 AND 1385, WOULD CONFLICT WITH THE PROPOSED WORK AND ARE PROPOSED FOR REMOVAL. THE TWO TREES TO BE REMOVED ARE BOTH IN POOR HEALTH DUE TO BRONZE BIRCH BORER DAMAGE AND SEVERE PRUNING. NO ADJACENT TREES WILL BE AFFECTED BY THE REMOVAL OF THESE TREES.

- TREE #1201* HAS A TPZ THAT WILL LIKELY INTERFERE WITH CONSTRUCTION ACTIVITIES. TO THE SOUTH OF THE TREE, THE TPZ WILL BE REDUCED BY 30%. THIS WOULD REDUCE THE TPZ FROM 43' TO 30'. ANY EXCAVATION DONE WITHIN THE TPZ ZONES SHALL BE DONE WITH HAND TOOLS AND A CONSULTING ARBORIST ON SITE.
- TREE #1199* HAS A TPZ THAT WILL LIKELY INTERFERE WITH THE CONSTRUCTION OF THE DRIVEWAY. TO THE SOUTH OF THE TREE, THE TPZ WILL BE REDUCED BY 10% TO MATCH TREE #1201'S TPZ. THIS WOULD REDUCE THE TPZ ON THE SOUTH SIDE OF THE TREE FROM 33' TO 30'. ANY EXCAVATION DONE WITHIN THE TPZ ZONES SHALL BE DONE WITH HAND TOOLS AND A CONSULTING ARBORIST ON SITE.

TO AVOID ANY CONFLICTS OF INTEREST, EASTSIDE TREE WORKS WILL NOT BE PERFORMING ANY TREE REMOVALS ASSOCIATED WITH THIS CONSTRUCTION PROJECT.

TREE PROTECTION PLAN

SCALE: 1" = 10'-0"

Project
SINGLE-FAMILY RESIDENCE
PARCEL#: 502190-0790
8456 SE 40TH
MERCER ISLAND, WA 98040

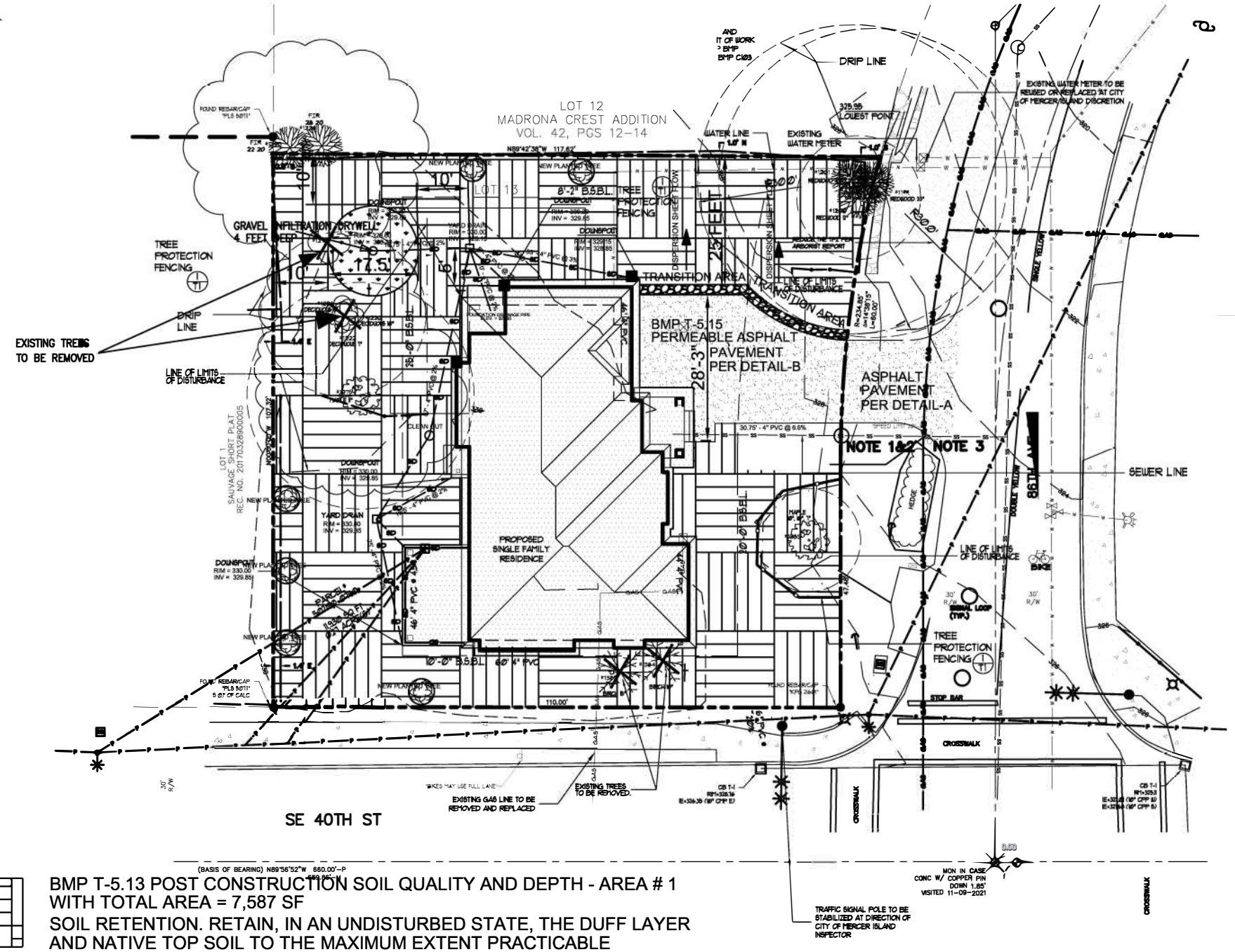
Prepared for
KUN QIAN &
LAURIE QIAN

URBAN DESIGN GROUP
15445 53rd AVE. S, STE. 110 SEATTLE, WA 98188

PLAN ISSUE: 03/30/2023
DESIGN BY: IVAN SHVETS
ENGINEER:
REV. DATE:
COMMENTS:

PLOT DATE: 10-09-2023

Project #: 21257
Sheet T1



BMP T-5.13 POST CONSTRUCTION SOIL QUALITY AND DEPTH - AREA # 1
WITH TOTAL AREA = 7,587 SF

SOIL RETENTION. RETAIN, IN AN UNDISTURBED STATE, THE DUFF LAYER AND NATIVE TOP SOIL TO THE MAXIMUM EXTENT PRACTICABLE

NOTES:

1. THE CONTRACTOR WILL POTHOLE TO DETERMINE THE EXACT ELEVATION OF THE SEWER PIPE CONNECTION
2. THE TV INSPECTION OF THE EXISTING SIDE-SEWER TO THE CITY SEWER MAIN ON 86TH AVE SE IS REQUIRED PRIOR ANY WORK RELATED TO THE SIDE SEWER. IF THE RESULT OF THE TV INSPECTION IS NOT IN SATISFACTORY CONDITION, AS DETERMINED BY THE CITY OF MERCER ISLAND INSPECTOR, THE REPLACEMENT OF THE EXISTING SIDE SEWER IS REQUIRED.
3. REMOVAL OF THE HEDGE FROM THE PUBLIC RIGHT OF WAY AND PROTECT THE EXISTING SPEED SIGNAGE

SKYGATE ENGINEERS AND CONSULTANTS LLC,
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KERELLOS GEORGE YOUSSEF
STATE OF WASHINGTON
53261
REGISTERED PROFESSIONAL ENGINEER

SEP. 17, 2023

REVISIONS

NO.	DATE	DESCRIPTION
1	SEP. 17, 2023	FOR PERMITS
2	OCT. 29, 2023	FOR PERMITS

SITE PLAN

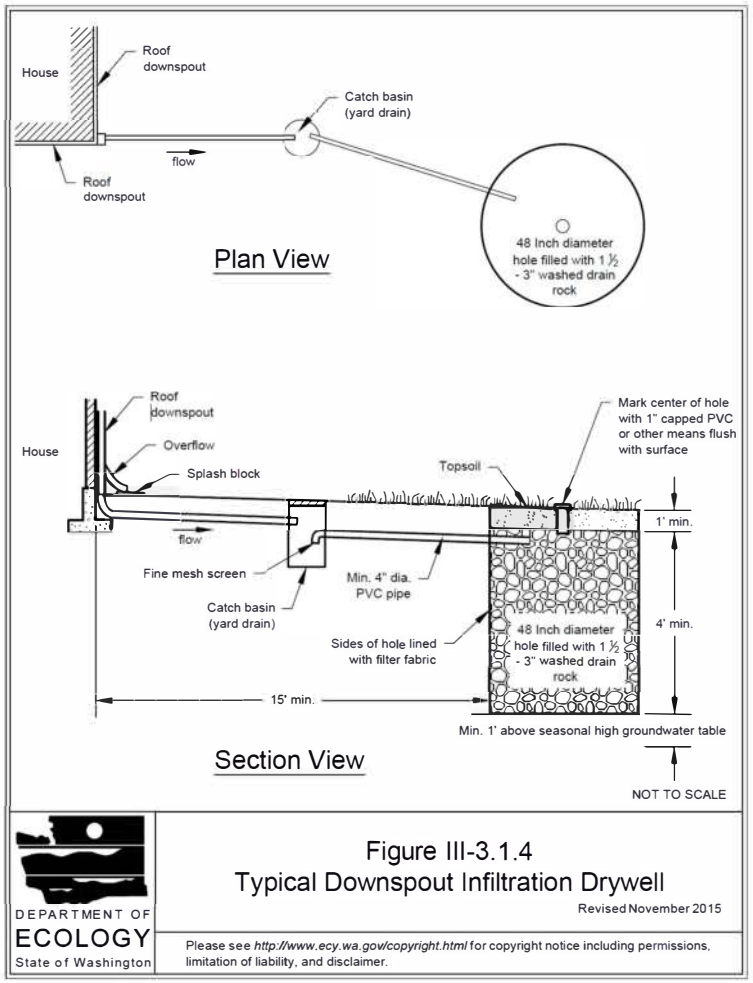
PROJECT: KUN & LAURIE QIAN RESIDENCE
8456 SE 40TH STREET
MERCER ISLAND, WA
98040

DWG. NO.: C-1

SCALE: 1' = 10'-0"

DATE: 09/17/2023

Figure III-3.1.4 Typical Downspout Infiltration Drywell



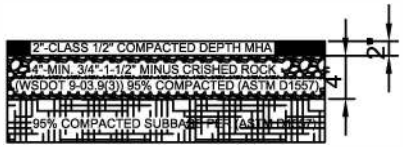
DEPARTMENT OF ECOLOGY
State of Washington

Figure III-3.1.4
Typical Downspout Infiltration Drywell
Revised November 2015

2014 Stormwater Management Manual for Western Washington

Volume III - Chapter 3 - Page 457

GRAVEL INFILTRATION DRYWELL
BMP T-5.10 A



DETAIL A
ASPHALT PAVEMENT IN THE CITY ROW
SCALE: N.T.S

DETAIL B
PERMEABLE ASPHALT PAVEMENT
BMP T-5.15
SCALE: N.T.S

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SEP. 17, 2023

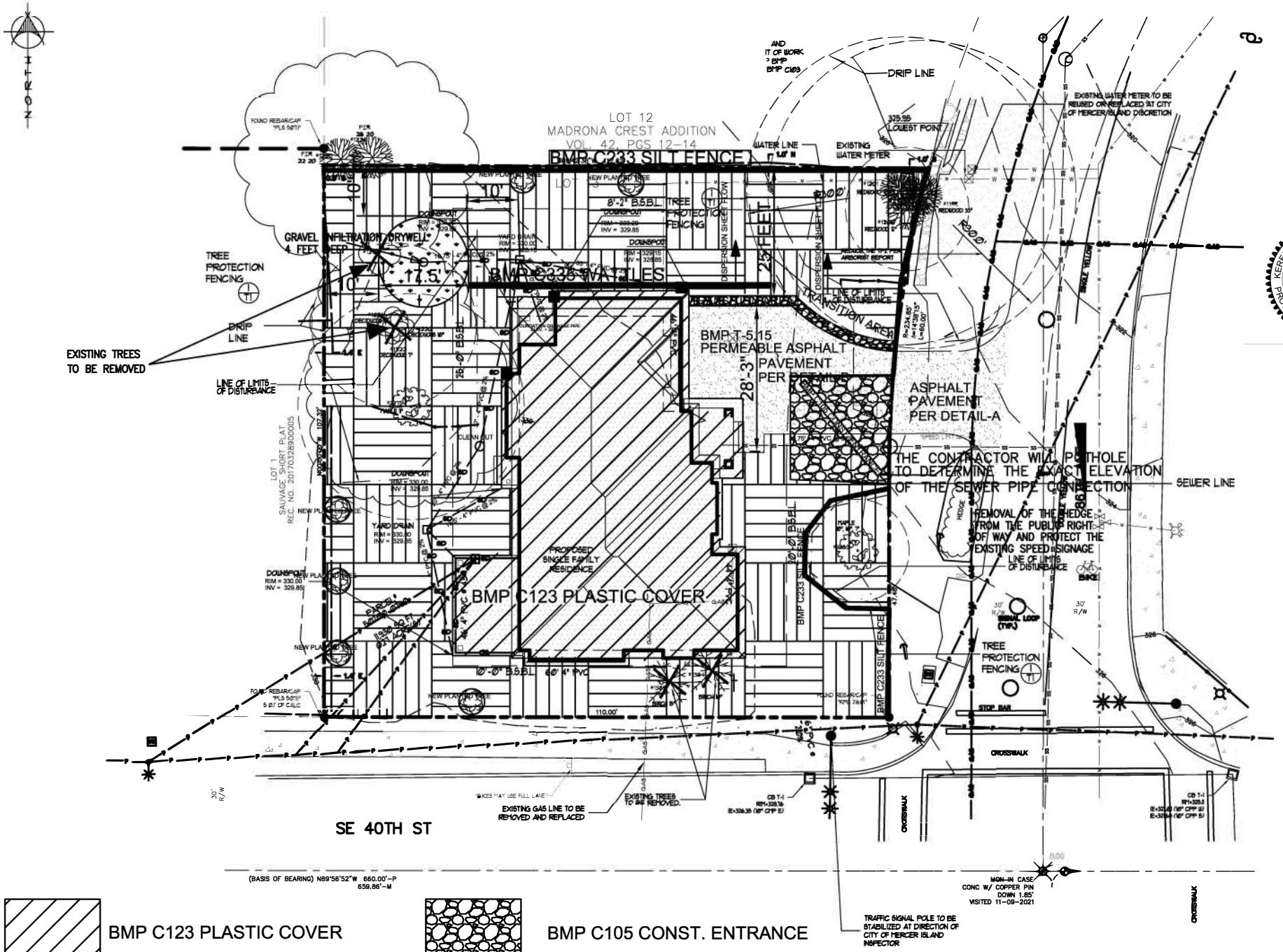
REVISIONS

NO.	DATE	DESCRIPTION
2	SEP. 17, 2023	FOR PERMITS
1	OCT. 29, 2023	FOR PERMITS

SITE PLAN

PROJECT: KUN & LAURIE QIAN RESIDENCE
8456 SE 40TH STREET
MERCER ISLAND, WA 98040

DWG. NO.: C-2
SCALE: N.T.S
DATE: 09/17/2023



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SEP. 17, 2023

REVISIONS		
NO.	DATE	DESCRIPTION
2	SEP. 17, 2023	FOR PERMITS
1	OCT. 29, 2023	FOR PERMITS

TESC PLAN

PROJECT: KUN & LAURIE QIAN RESIDENCE
8456 SE 40TH STREET
MERCER ISLAND, WA
98040

DWG. NO.:	C-3
SCALE:	1' = 10'-0"
DATE:	09/17/2023

GENERAL NOTES

- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL RESIDENTIAL CODE
- 2018 UNIFORM PLUMBING CODE
- 2018 WASHINGTON STATE ENERGY CODE
- 2018 WASHINGTON STATE AMENDMENTS

CONTRACTOR SHALL VERIFY ALL NOTES, DIMENSIONS & CONDITIONS PRIOR TO CONSTRUCTION & PROVIDE TEMPORARY BRACING AS REQUIRED UNTIL ALL PERMANENT CONNECTIONS HAVE BEEN INSTALLED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY

REPETITIVE FEATURES NOT NOTED ON THE DRAWINGS SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL

CONTRACTOR SHALL VERIFY ALL ROUGH-IN DIMENSIONS FOR ALL EQUIPMENT TO BE INSTALLED

SITE WORK

GENERAL
UNLESS A SOILS INVESTIGATION BY A QUALIFIED SOILS ENGINEER IS PROVIDED, FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING OF 1500 PSF. EXTERIOR FOOTINGS SHALL BEAR 18" (MINIMUM) BELOW FINISHED GRADE. ALL FOOTINGS TO BEAR ON FIRM UNDISTURBED EARTH BELOW ORGANIC SURFACE SOILS. BACK FILL TO BE THOROUGHLY COMPACTED. FOUNDATION VENTS SHALL NOT INTERFERE WITH DIRECT LOAD PATH OF COLUMNS.

CONCRETE

MIX AND 28 DAY STRENGTH OF CONCRETE

- BASEMENT WALLS & FOUNDATIONS & OTHER CONCRETE NOT EXPOSED TO WEATHER:	PER STRUCTURAL S-SHEETS
- BASEMENT SLABS & INTERIOR SLABS & INTERIOR SLABS ON GRADE, EXCEPT GARAGE DOOR SLABS	PER STRUCTURAL S-SHEETS
- BASEMENT WALLS & FOUNDATION WALLS, EXTERIOR WALLS & OTHER VERTICAL CONCRETE WORK EXPOSED TO THE WEATHER:	PER STRUCTURAL S-SHEETS
- PORCHES, CARPORT SLABS & STEPS EXPOSED TO WEATHER, & GARAGE	PER STRUCTURAL S-SHEETS

FLOOR SLABS:

GARAGE FLOORS TO SLOPE 1/8"/FT. MIN. TOWARDS OPENING AS REQUIRED FOR DRAINAGE. CONCRETE SLABS TO HAVE CONTROL JOINTS AT 25' FT. (MAX.) INTERVALS EA. WAY. SLABS ARE TO BE 5-AIR ENTRAINED CONCRETE SIDEWALKS TO HAVE 3/4" IN. TOOLED JOINTS AT 5' FT. (MIN.) O.C.

CONCRETE COVER OF REINFORCING

3" CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.
1 1/2" CONCRETE EXPOSED TO EARTH OR WEATHER.
1 1/2" BEAMS AND COLUMNS NOT EXPOSED TO EARTH OR WEATHER.
3/4" SLABS AND WALLS NOT EXPOSED TO EARTH OR WEATHER.
LAP COLUMN VERTICALS. CLASS "A" CONCRETE AND MASONRY COLUMN AND WALL VERTICALS 52 DIAMETERS. LAP ALL OTHER REINFORCING 24 DIAMETERS. SPLICES AT TENSION REGIONS SHALL NOT BE PERMITTED.

CARPENTRY

GENERAL
ALL FRAMING TO COMPLY WITH ENGINEERING S-SHEETS FOR NAIL SIZES AND SPACING.

ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.

6" MIN. CLEARANCE BETWEEN WOOD AND EARTH.
18" MIN. CLEARANCE BETWEEN FLOOR JOIST AND EARTH.
12" MIN. CLEARANCE BETWEEN FLOOR BEAMS AND EARTH.

FASTENERS FOR PRESSURE PRESERVATIVE AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT-DIPPED GALVANIZED STEEL.

REFERENCE SHEET-S1 FOR SPECIES AND GRADE (BASE DESIGN VALUES)

BOLT HEADS AND NUTS BEARING AGAINST WOOD TO BE PROVIDED WITH 3"X3"X.224" PLATE WASHERS. WOOD BEARING ON OR INSTALLED WITHIN 1" OF MASONRY OR CONCRETE TO BE TREATED WITH AN APPROVED PRESERVATIVE. SOLID BLOCKING OF NOT LESS THAN 2 X THICKNESS SHALL BE PROVIDED AT ENDS AND AT ALL SUPPORT OF JOISTS AND RAFTERS. BETWEEN SUPPORTS PROVIDED AT ENDS AND AT ALL SUPPORT OF JOISTS AND RAFTERS, JOISTS, 10'-0" FOR ROOF JOISTS. TYPICAL SILL BOLTS TO BE 5/8" DIAMETER AT 6'-0" O.C. MINIMUM 7" EMBED. ALL METAL FRAMING ANCHORS AND HANGERS SHOWN ON DRAWINGS SHALL BE STRONG TIE CONNECTORS AS MANUFACTURED BY SIMPSON COMPANY.

PLYWOOD
PLYWOOD WALL AND ROOF SHEATHING SHALL BE 3/4" CDX, UNLESS OTHERWISE SPECIFIED. PLYWOOD FLOOR SHEATHING SHALL BE 3/4" CDX T&G. UNLESS OTHERWISE SPECIFIED. STAGGER END LAPS AT ROOF AND FLOOR SHEATHING. OSB SHEATHING PRODUCTS OF EQUIVALENT SPAN RATINGS SHALL BE ALLOWED.

WOOD TRUSSES
ALL ROOF TRUSSES SHALL BE FRAMED AND TIED INTO THE FRAME WORK AND SUPPORTING WALLS SO AS TO FROM AN INTEGRAL PART OF THE WHOLE BUILDING. ROOF TRUSSES SHALL HAVE JOINTS WELL FITTED AND SHALL HAVE ALL TENSION MEMBERS WELL TIGHTENED BEFORE ANY LOAD IS PLACED UPON THE TRUSS. DIAGONAL AND SWAY BRACING SHALL BE USED TO BRACEALL TRUSSES.

SEE SHEET-S1 FOR DESIGN CRITERIA

INSULATION AND MOISTURE PROTECTION

GENERAL
INSULATION BAFFLES TO MAINTAIN 1" ABOVE BATT INSULATION
BAFFLES TO EXTEND 6" ABOVE BATT INSULATION
BAFFLES TO EXTEND 12" ABOVE LOOSE FILL INSULATION
INSULATE BEHIND TUBS/SHOWERS, PARTITIONS AND CORNERS FACE STAPLE BATTS
FRICTION FIT FACED BATTS
USE 4 MIL POLY VAPOR RETARDER AT WALLS.
* R-10 RIGID FOAM INSULATION ON 4X EVADERS AT EXTERIOR WALLS.

INFILTRATION CONTROL

1. EXTERIOR JOINTS AROUND WINDOWS AND DOOR FRAMES, OPENINGS BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AND ROOF AND BETWEEN WALL PANELS, OPENINGS AT PENETRATIONS OF UTILITY SERVICES THROUGH WALLS, FLOOR AND ROOFS, AND ALL OTHER SUCH OPENINGS IN THE BUILDING ENVELOPE, INCLUDING ACCESS PANELS INTO UNHEATED SPACES, SHALL BE SEALED, CAULKED, GASKETED OR WEATHER-STRIPPED TO LIMIT AIR LEAKAGE. ALL OPENINGS SHALL BE FLASHED. APPROVED CORROSION-RESISTIVE FLASHING SHALL BE PROVIDED IN THE EXTERIOR WALL ENVELOPE IN SUCH A MANNER AS TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH AND SHALL BE INSTALLED TO PREVENT WATER FROM REENTERING THE EXTERIOR WALL ENVELOPE. APPROVED CORROSION-RESISTANT FLASHING SHALL BE INSTALLED AT ALL OF THE FOLLOWING LOCATIONS:
1. AT TOP OF ALL EXTERIOR WINDOW AND DOOR OPENINGS IN SUCH A MANNER AS TO BE LEAKPROOF, EXCEPT THAT SELF-FLASHING WINDOWS HAVING A CONTINUOUS LAP OF NOT LESS THAN 1-1/8" OVER THE SHEATHING MATERIAL AROUND THE PERIMETER OF THE OPENING, INCLUDING CORNERS, DO NOT REQUIRE ADDITIONAL FLASHING; JAMB FLASHING MAY ALSO BE OMITTED WHEN SPECIFICALLY APPROVED BY THE BUILDING OFFICIALS.
2. AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR WALLS, WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO COPINGS.
3. UNDER AND AT THE ENDS OF MASONRY, WOOD OR METAL COPINGS AND SILLS.
4. CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM.
5. WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD-FRAME CONSTRUCTION.
6. AT WALL AND ROOF INTERSECTIONS.
7. AT BUILT-IN GUTTERS.

- ALL EXTERIOR DOORS, OTHER THAN FIRE-RATED DOORS, SHALL BE DESIGNED TO LIMIT AIR LEAKAGE AROUND THEIR PERIMETER WHEN IN A CLOSED POSITION. DOORS BETWEEN RESIDENCE AND GARAGE ARE NOT CONSIDERED FIRE-RATED AND MUST MEET THE ABOVE REQUIREMENT.

- ALL EXTERIOR WINDOWS SHALL BE DESIGNED TO ADMIT INFILTRATION INTO OR FROM THE BUILDING ENVELOPE.

- RECESSED LIGHTING FIXTURES: WHEN INSTALLED IN THE BUILDING ENVELOPE, RECESSED LIGHTING FIXTURES SHALL BE TYPE IC RATED AND CERTIFIED TO HAVE NO MORE THAN 2.0 CFM AIR MOVEMENT FROM THE CONDITIONED SPACE TO THE CEILING CAVITY. THE LIGHTING FIXTURE SHALL BE TESTED AT 75 PASCAL'S OR 1.57 LBS/FT2 PRESSURE DIFFERENCE AND HAVE A LABEL ATTACHED, SHOWING COMPLIANCE WITH THIS TEST METHOD. RECESSED LIGHTING FIXTURES SHALL BE INSTALLED WITH A GASKET OR CAULK BETWEEN THE FIXTURE AND CEILING TO PREVENT AIR LEAKAGE.

VAPOR BARRIERS/ GROUND COVERS
AN APPROVED VAPOR BARRIER SHALL BE PROPERLY INSTALLED IN ROOF DECKS, IN ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, AND AT EXTERIOR WALLS, INSET STAPLED BATTS WITH A PERM RATING LESS THAN ONE MAY BE INSTALLED IF THE VAPOR BARRIER IS TO THE WARM SIDE, STAPLES ARE PLACED NOT MORE THAN 8 INCHES ON CENTER AND GAPS BETWEEN THE FACING AND THE FRAMING DO NOT EXCEED 1/16 INCH.

A GROUND COVER OF 6 MIL (0.006")BLACK POLYETHYLENE OR EQUIVALENT, SHALL BE LAID OVER THE GROUND IN ALL CRAWL SPACES. THE GROUND COVER SHALL BE OVERLAPPED ONE FOOT AT EACH JOINT AND SHALL EXTEND TO THE FOUNDATION WALL.

WINDOWS, DOORS, HVAC, & ELECT. EQUIP.

GLAZING MAXIMUM:
ALL CLIMATE ZONES:
GLAZING "U" VALUE: VERTICAL (MAX): .28
OVERHEAD (MAX.): .50
DOOR "U" VALUE (MAX): .20
(DOORS W/ MORE THAN 50 CONSIDERED A WINDOW)
HVAC PERFORMANCE: "MED" OR AFUE = .97
RECESSED LIGHT FIXTURES: IC RATED

DOORS, WINDOWS AND SKYLIGHTS

GENERAL
DOORS TO THE EXTERIOR SHALL HAVE MAX. 3" STEP TO MIN. 36" DEEP LANDING. .

BEDROOM EMERGENCY EGRESS WINDOWS MINIMUM NET CLEAR OPENING OF 5.7 SQ. FT. MIN. NET CLEAR OPEN ABLE WIDTH OF 20" AND MINIMUM NET CLEAR OPENING HEIGHT OF 24", MAXIMUM FINISHED SILL HEIGHT OF 44" ABOVE FLOOR.

FACTORY BUILT WINDOWS TO BE CONSTRUCTED TO PERMIT MAXIMUM INFILTRATION OF 0.5 CFM PER LINEAL FOOT OF OPERABLE SASH PERIMETER AS TESTED BY ASTM STANDARDS. SITE BUILT AND MILL WORK SHOP BUILT WOODEN SASH ARE EXEMPT FROM INFILTRATION CRITERIA ABOVE, BUT MUST BE MADE TIGHTLY FITTING AND WEATHER STRIPPED OR CAULKED. SLIDING GLASS DOORS TO PERMIT MAXIMUM INFILTRATION OF 0.5 CFM INFILTRATION PER SQUARE FOOT OF DOOR AREA.

SAFETY GLAZING SHALL BE LOCATED WITHIN

1. INGRESS AND EGRESS DOORS
2. SLIDING GLASS DOORS, SWINGING GLASS DOORS
3. SHOWER AND BATHTUB ENCLOSURE'S
4.GLAZING W/ THE EXPOSED EDGE WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF A DOOR IN THE CLOSED PORTION& BOTTOM EDGE IS LESS THAN 60" ABOVE THE WALKING SURFACE GLAZING GREATER THAN 9 S.F. LESS THAN 13"ABOVE FINISHED FLOOR.
WINDOW SILLS: 612.2, 24" MINIMUM SILL HEIGHT EXCEPTIONS ALLOW FOR OPENING LIMITING DEVICE FOR 4" DIAMETER SPHERE AND WINDOW FALL PREVENTION DEVICE THAT COMPLIES WITH 612.3.

STRUCTURAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CONTRACT DRAWINGS.
2. DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF ENGINEER.
5. ALL DETAILS DESIGNATED AS STANDARD OR TYPICAL SHALL OCCUR IN ADDITION TO ANY OTHER SPECIFIC DETAIL CALLED OUT
6. COORDINATE WITH MECHANICAL, PLUMBING, AND ELECTRICAL REQUIREMENTS FOR SIZE AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES, AND PIPE SLEEVES, ELECTRICAL CONDUITS, AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK.
7. PROVIDE OPENINGS AND SUPPORTS, AS REQUIRED PER STANDARD DETAILS FOR HEATERS, MECHANICAL EQUIPMENT, VENTS, DUCTS, PIPING, ETC. ALL SUSPENDED MECHANICAL EQUIPMENT SHALL BE SWAY OR LATERALLY BRACED.

TYPE OF CONSTRUCTION

V-B

UNPROTECTED WOOD FRAME
(EXAMPLES OF CONSTRUCTION ARE SINGLE FAMILY HOMES AND GARAGES, THEY OFTEN HAVE EXPOSED WOOD SO THERE IS NO FIRE RESISTANCE.)

PLAN PREVIEW

NOT TO SCALE

URBAN DESIGN GROUP
15445 53 RD AVE. S. STE. 110 TUKWILA, WA 98188
(206) 838-8250 E-MAIL: URBANDESIGNCENTER@YAHOO.COM

PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022
DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:
GENERAL NOTES AND PLAN PREVIEW

PROJECT NUMBER:
21257

SHEET NUMBER:
A1.1

PERSPECTIVE ENERGY CREDITS

VERTIGAL FENESTRATION U=0.28

FLOOR R-38

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021) Version 1.0

These requirements apply to all IRC building types, including detached one- and two-family dwellings and multiple single-family dwellings (townhouses).

Project Information	*Contact Information*

Instructions: This single-family project will use the requirements of the Prescriptive Path below and incorporate the minimum values listed. Based on the size of the structure, the appropriate number of additional credits are checked as chosen by the permit applicant.

Provide all information from the following tables as building permit drawings: Table R402.1 - Insulation and Fenestration Requirements by Component, Table R406.2 - Fuel Normalization Credits and 406.3 - Energy Credits.

Authorized Representative		*Date*	

All Climate Zones (Table R402.1.1)			
		R-Value [a]	U-Factor [a]
Fenestration U-Factor [b]		n/a	0.30
Skylight U-Factor [b]		n/a	0.50
Glazed Fenestration SHGC [b,e]		n/a	n/a
Ceiling [e]		49	0.026
Wood Frame Wall [e,h]		21 int	0.056
Floor		30	0.029
Below Grade Wall [c,h]		10/15/21 int + TB	0.042
Slab [d,e] R-Value & Depth		10, 2 ft	n/a
a	*R*-values are minimums. *U*-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the compressed *R*-value of the insulation from Appendix Table A101.4 shall not be less than the *R*-value specified in the table.		
b	The fenestration *U*-factor column excludes skylights.		
c	"10/15/21 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21 +5TB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "5TB" means R-5 thermal break between floor slab and basement wall.		
d	R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.		
e	For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.		
f	R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.		
g	For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for *climate zone* 5 of ICC 400.		
h	Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78% of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.		

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021)

Each dwelling unit ***in a residential building*** shall comply with sufficient options from Table R406.2 (fuel normalization credits) and Table 406.3 (energy credits) to achieve the following minimum number of credits. To claim this credit, the building permit drawings shall specify the option selected and the maximum tested building air leakage, and show the qualifying ventilation system and its control sequence of operation.

1. **Small Dwelling Unit:** 3 credits
   Dwelling units less than 1,500 sf in conditioned floor area with less than 300 sf of fenestration area. Additions to existing building that are greater than 500 sf of heated floor area but less than 1,500 sf.
2. **Medium Dwelling Unit:** 6 credits
   All dwelling units that are not included in #1 or #3
3. **Large Dwelling Unit:** 7 credits
   Dwelling units exceeding 5,000 sf of conditioned floor area
4. **Additions less than 500 square feet:** 1.5 credits
   All other additions shall meet 1-3 above

Before selecting your credits on this Summary table, review the details in Table 406.3 (Single Family), on page 4.

Summary of Table R406.2

Heating Options	Fuel Normalization Descriptions	Credits - select ONE heating option		User Notes
1	Combustion heating minimum NAECA[b]	0.0	☐	
2	Heat pump[c]	1.0	⦿	
3	Electric resistance heat only - furnace or zonal	-1.0	○	
4	DHP with zonal electric resistance per option 3.4	0.5	○	
5	All other heating systems	-1.0	○	
Energy Options	**Energy Credit Option Descriptions**	**Credits - select ONE energy option from each category [d]**		
1.1	Efficient Building Envelope	0.5	○	
1.2	Efficient Building Envelope	1.0	○	
1.3	Efficient Building Envelope	0.5	▪	
1.4	Efficient Building Envelope	1.0	○	
1.5	Efficient Building Envelope	2.0	○	
1.6	Efficient Building Envelope	3.0	○	
1.7	Efficient Building Envelope	0.5	○	
2.1	Air Leakage Control and Efficient Ventilation	0.5	☐	
2.2	Air Leakage Control and Efficient Ventilation	1.0	☐	
2.3	Air Leakage Control and Efficient Ventilation	1.5	☐	
2.4	Air Leakage Control and Efficient Ventilation	2.0	☐	
3.1[a]	High Efficiency HVAC	1.0	☐	
3.2	High Efficiency HVAC	1.0	☐	
3.3[a]	High Efficiency HVAC	1.5	☐	
3.4	High Efficiency HVAC	1.5	☐	
3.5	High Efficiency HVAC	1.5	▪	
3.6[a]	High Efficiency HVAC	2.0	☐	
4.1	High Efficiency HVAC Distribution System	0.5	▪	
4.2	High Efficiency HVAC Distribution System	1.0	☐	

2018 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective February 1, 2021)

Summary of Table R406.2 (cont.)

Energy Options	Energy Credit Option Descriptions (cont.)	Credits - select ONE energy option from each category [d]		User Notes
5.1[d]	Efficient Water Heating	0.5	☑	
5.2	Efficient Water Heating	0.5	☐	
5.3	Efficient Water Heating	1.0	☐	
5.4	Efficient Water Heating	1.5	☐	
5.5	Efficient Water Heating	2.0	▪	
5.6	Efficient Water Heating	2.5	☐	
6.1[e]	Renewable Electric Energy (3 credits max)	1.0	☐	
7.1	Appliance Package	0.5	☐	
	Total Credits	6.0	Calculate Total	Clear Form

a. An alternative heating source sized at a maximum of 0.5 W/sf (equivalent) of heated floor area or 500 W, whichever is bigger, may be installed in the dwelling unit.
b. Equipment listed in Table C403.3.2(4) or C403.3.2(5)
c. Equipment listed in Table C403.3.2(1) or C403.3.2(2)
d. You cannot select more than one option from any category EXCEPT in category 5. Option 5.1 may be combined with options 5.2 through 5.6. See Table 406.3.
e. 1.0 credit for each 1,200 kWh of electrical generation provided annually, up to 3 credits max. See the complete Table R406.2 for all requirements and option descriptions.
f. Use the single radiobutton in the upper right of the second column to deselect radiobuttons in that group.

ENERGY CREDITS DESCRIPTION

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
1. EFFICIENT BUILDING ENVELOPE OPTIONS	Only one option from Items 1.1 through 1.7 may be selected in this category. Compliance with the conductive UA targets is demonstrated using Section R402.1.4, Total UA alternative, where [1-(Proposed UA/Target UA)] > the required %UA reduction.	
1.1	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.24**	0.5
1.2	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.20**	1.0
1.3	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.28** Floor R-38 Slab on grade R-10 perimeter and under entire slab below grade slab R-10 perimeter and under entire slab ***or*** Compliance based on Section R402.1.4: Reduce the Total conductive UA by 5%	0.5
1.4	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.25** Wall R-21 plus R-4 ci Floor R-38 Basement wall R-21 int plus R-5 ci Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab ***or*** Compliance based on Section R402.1.4: Reduce the Total conductive UA by 15%	1.0
1.5	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.22** Ceiling and single-rafter or joist-vaulted R-49 advanced Wood frame wall R-21 int plus R-12 ci Floor R-38 Basement wall R-21 int plus R-12 ci Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab ***or*** Compliance based on Section R402.1.4: Reduce the Total conductive UA by 30%	2.0
1.6	Prescriptive compliance is based on Table R402.1.1 with the following modifications: **Vertical fenestration U = 0.18** Ceiling and single-rafter or joist-vaulted R-60 advanced Wood frame wall R-21 int plus R-16 ci Floor R-48 Basement wall R-21 int plus R-16 ci Slab on grade R-20 perimeter and under entire slab Below grade slab R-20 perimeter and under entire slab ***or*** Compliance based on Section R402.1.4: Reduce the Total conductive UA by 40%.	3.0
1.7	Advanced framing and raised heel trusses or rafters Vertical Glazing U-0.28 R-49 Advanced (U-0.020) as listed in Section A102.2.1, *Ceilings below a vented attic* ***and*** R-49 vaulted ceilings with full height of uncompressed insulation extending over the wall top plate at the eaves.	0.5

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
2. AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION OPTIONS	Only one option from Items 2.1 through 2.4 may be selected in this category.	
2.1	Compliance based on R402.4.1.2: Reduce the tested air leakage to **3.0 air changes per hour** maximum at 50 Pascals ***or*** For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to **0.3 cfm/sf maximum at 50 Pascals *and*** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* or Section 403.8 of the *International Mechanical Code* shall be met with a high efficiency fan(s) (**maximum 0.35 watts/cfm**), not interlocked with the furnace fan (if present). Ventilation systems using a furnace including an ECM motor are allowed, provided that they are controlled to operate at low speed in ventilation only mode. To qualify to claim this credit, the building permit drawings shall specify the option being selected and the maximum tested building air leakage, and shall show the qualifying ventilation system and its control sequence of operation.	0.5
2.2	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to **2.0 air changes per hour maximum at 50 Pascals *or*** For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.25 cfm/sf maximum at 50 Pascals ***and*** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* or Section 403.8 of the *International Mechanical Code* shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of **0.65**. [1]	1.0
2.3	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to **1.5 air changes per hour** maximum at 50 Pascals ***or*** For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to **0.25 cfm/sf** maximum at 50 Pascals ***and*** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* or Section 403.8 of the *International Mechanical Code* shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of **0.75**. [1]	1.5
2.4	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to **0.6 air changes per hour** maximum at 50 Pascals ***or*** For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to **0.15 cfm/sf** maximum at 50 Pascals **and** All whole house ventilation requirements as determined by Section M1507.3 of the *International Residential Code* or Section 403.8 of the *International Mechanical Code* shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of **0.80. Duct installation shall comply with Section R403.3.7**. [1]	2.0

[1] To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
3. HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS	Only one option from Items 3.1 through 3.6 may be selected in this category.	
3.1 [3]	Energy Star rated (U.S. North) Gas or propane furnace with minimum AFUE of 95% ***or*** Energy Star rated (U.S. North) Gas or propane boiler with minimum AFUE of 90%. [2]	1.0
3.2 [3]	Air-source centrally ducted heat pump with minimum HSPF of 9.5. [4]	1.0
3.3 [3]	Closed-loop ground source heat pump; with a minimum COP of 3.3 ***or*** Open loop water source heat pump with a maximum pumping hydraulic head of 150 feet and minimum COP of 3.6. [3]	1.5
3.4	Ductless mini-split heat pump system, zonal control: In homes where the primary space heating system is zonal electric heating, a ductless mini-split heat pump system with a minimum HSPF of 10.0 shall be installed and provide heating to the largest zone of the housing unit. [4]	1.5
3.5 [3]	Air-source, centrally ducted heat pump with minimum HSPF of 11.0. [4]	1.5
3.6 [3]	Ductless split system heat pumps with no electric resistance heating in the primary living areas. A ductless heat pump system with a minimum HSPF of 10 shall be sized and installed to provide heat to entire dwelling unit at the design outdoor air temperature. To qualify to claim this credit, the building permit drawings shall specify the option being selected, the heated floor area calculation, the heating equipment type(s), the minimum equipment efficiency, and total installed heat capacity (by equipment type).	2.0

[2] An alternative heating source sized at a maximum of 0.5 W/sf(equivalent) of heated floor area or 500 W, whichever is bigger, may be installed in the dwelling unit.
[3] To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.
[4] To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
4. HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTIONS		
4.1	All supply and return ducts located in an unconditioned attic shall be deeply buried in ceiling insulation in accordance with Section R403.3.7. For mechanical equipment located outside the conditioned space, a maximum of 10 linear feet of return duct and 5 linear feet of supply duct connections to the equipment may be outside the deeply buried insulation. All metallic ducts located outside the conditioned space must have both transverse and longitudinal joints sealed with mastic. If flex ducts are used, they cannot contain splices. Duct leakage shall be limited to 3 cfm per 100 square feet of conditioned floor area. Air handler(s) shall be located within the conditioned space. HVAC equipment and associated duct system(s) installation shall comply with the requirements of Section R403.3.7.	0.5
4.2	Locating system components in conditioned crawl spaces is not permitted under this option. Electric resistance heat and ductless heat pumps are not permitted under this option. Direct combustion heating equipment with AFUE less than 80% is not permitted under this option. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and shall show the location of the heating and cooling equipment and all the ductwork.	1.0

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
5. EFFICIENT WATER HEATING OPTIONS	Only one option from Items 5.2 through 5.6 may be selected in this category. Item 5.1 may be combined with any option.	
5.1	A drain water heat recovery unit(s) shall be installed, which captures waste water heat from all and only the showers, and has a minimum efficiency of 40% if installed for equal flow or a minimum efficiency of 54% if installed for unequal flow. Such units shall be rated in accordance with CSA 855.1 or IAPMO IGC 346-2017 and be so labeled. To qualify to claim this credit, the building permit drawings shall include a plumbing diagram that specifies the drain water heat recovery units and the plumbing layout needed to install it. Labels or other documentation shall be provided that demonstrates that the unit complies with the standard.	0.5
5.2	Water heating system shall include one of the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.80. [5]	0.5
5.3	Water heating system shall include one of the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.91 ***or*** Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems ***or*** Water heater heated by ground source heat pump meeting requirements of Option 3.3. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency and, for solar water heating systems, the calculation of minimum energy savings.	1.0
5.4	Water heating system shall include one of the following: Electric heat pump water heater meeting the standards for Tier I of NEEA's advanced water heating specification ***or*** For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier I of NEEA's advanced water heating specification, shall supply domestic hot water to all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-8 minimum pipe insulation. [5]	1.5
5.5	Water heating system shall include one of the following: Electric heat pump water heater meeting the standards for Tier III of NEEA's advanced water heating specification ***or*** For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier III of NEEA's advanced water heating specification, shall supply domestic hot water to all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-8 minimum pipe insulation. [5]	2.0
5.6	Water heating system shall include one of the following: Electric heat pump water heater with a minimum UEF of 2.9 and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors. Equipment shall meet Section 4, requirements for all units, of the NEEA standard *Advanced Water Heating Specification* with the UEF noted above ***or*** For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier III of NEEA's advanced water heating specification and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors, shall supply domestic hot water to all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-8 minimum pipe insulation. [5]	2.5

[5] To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency.

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
6. RENEWABLE ELECTRIC ENERGY OPTION		
6.1	For each 1200 kWh of electrical generation per housing unit provided annually by on-site wind or solar equipment a 1.0 credit shall be allowed, up to 3 credits. Generation shall be calculated as follows: For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculator PVWATTs or approved alternate by the code official. Documentation noting solar access shall be included on the plans. For wind generation projects designs shall document annual power generation based on the following factors: the wind turbine power curve; average annual wind speed at the site; frequency distribution of the wind speed at the site and height of the tower. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the photovoltaic or wind turbine equipment type, provide documentation of solar and wind access, and include a calculation of the minimum annual energy power production.	1.0
7. APPLIANCE PACKAGE OPTION		
7.1	All of the following appliances shall be new and installed in the dwelling unit and shall meet the following standards: Dishwasher – Energy Star rated Refrigerator (if provided) – Energy Star rated Washing machine – Energy Star rated Dryer – Energy Star rated, ventless dryer with minimum CEF rating of 5.2 To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the appliance type and provide documentation of Energy Star compliance. At the time of inspection, all appliances shall be installed and connected to utilities. Dryer ducts and exterior dryer vent caps are not permitted to be installed in the dwelling unit.	0.5

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MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

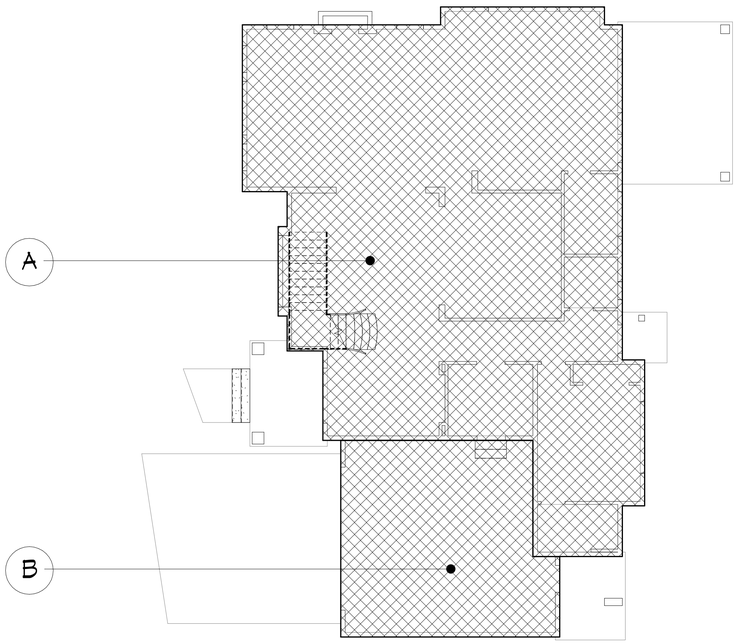
SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022

DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:
ENERGY CREDITS OPTIONS

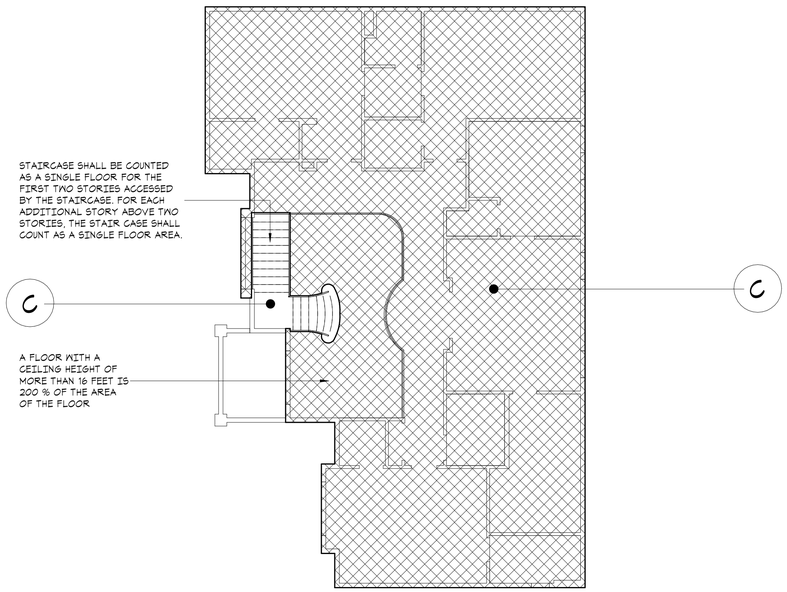
PROJECT NUMBER:
21257

SHEET NUMBER:
A1.2



MAIN FLOOR PLAN - GFR

SCALE: 1/4" = 1'-0"



UPPER FLOOR PLAN - GFR

SCALE: 1/4" = 1'-0"

GROSS FLOOR AREA:		
(A) MAIN FLOOR:	2 015	S.F.
(B) GARAGE:	500	S.F
(C) UPPER FLOOR:	2 255	S.F.
(D) STAIRCASE:	EXCLUDED	
TOTAL GROSS FLOOR AREA (GFA):	4 770	S.F.

GROSS FLOOR AREA:

LOT AREA:	11 930 s.f.
ALLOWED GFA *:	40%
GFA W/ALLOWANCE (40%):	4 772 s.f.
TOTAL PROPOSED GFA:	4,770 S.F. / 39.98%

* ZONING R-8.4: 5,000 SQUARE FEET OR 40% OF THE LOT AREA, WHICHEVER IS LESS.

** IF AN ACCESSORY DWELLING UNIT IS PROPOSED, THE 40% ALLOWED GFA MAY BE INCREASED BY THE LESSER OF 5 PERCENTILE POINTS, OR THE FLOOR AREA OF THE ACCESSORY DWELLING UNIT, PROVIDED, THIS ALLOWANCE SHALL NOT RESULT IN A GFA OF MORE THAN 4,500 SQUARE FEET OR 45% OF THE LOT AREA, WHICHEVER IS LESS.

NOTE:
THE GFA INCLUDES THE FLOOR AREA OF THE MAIN BUILDING, ACCESSORY BUILDINGS, GARAGES, ATTACHED ROOFED DECKS ON THE SECOND OR THIRD STORY OF A SINGLE FAMILY HOME, STAIR CASES, ETC. THE GFA DOES NOT INCLUDE SECOND- OR THIRD UNCOVERED DECKS OR UNCOVERED ROOFTOP DECKS.

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PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022
DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:

GROSS FLOOR AREA (GFA)

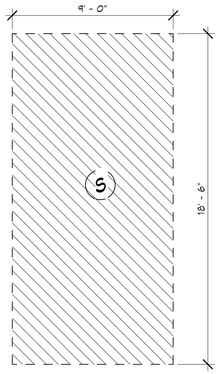
PROJECT NUMBER:
21257

SHEET NUMBER:
A2.1

PARKING REQUIRED (MICC 19.02.020(G)(2)(A)):

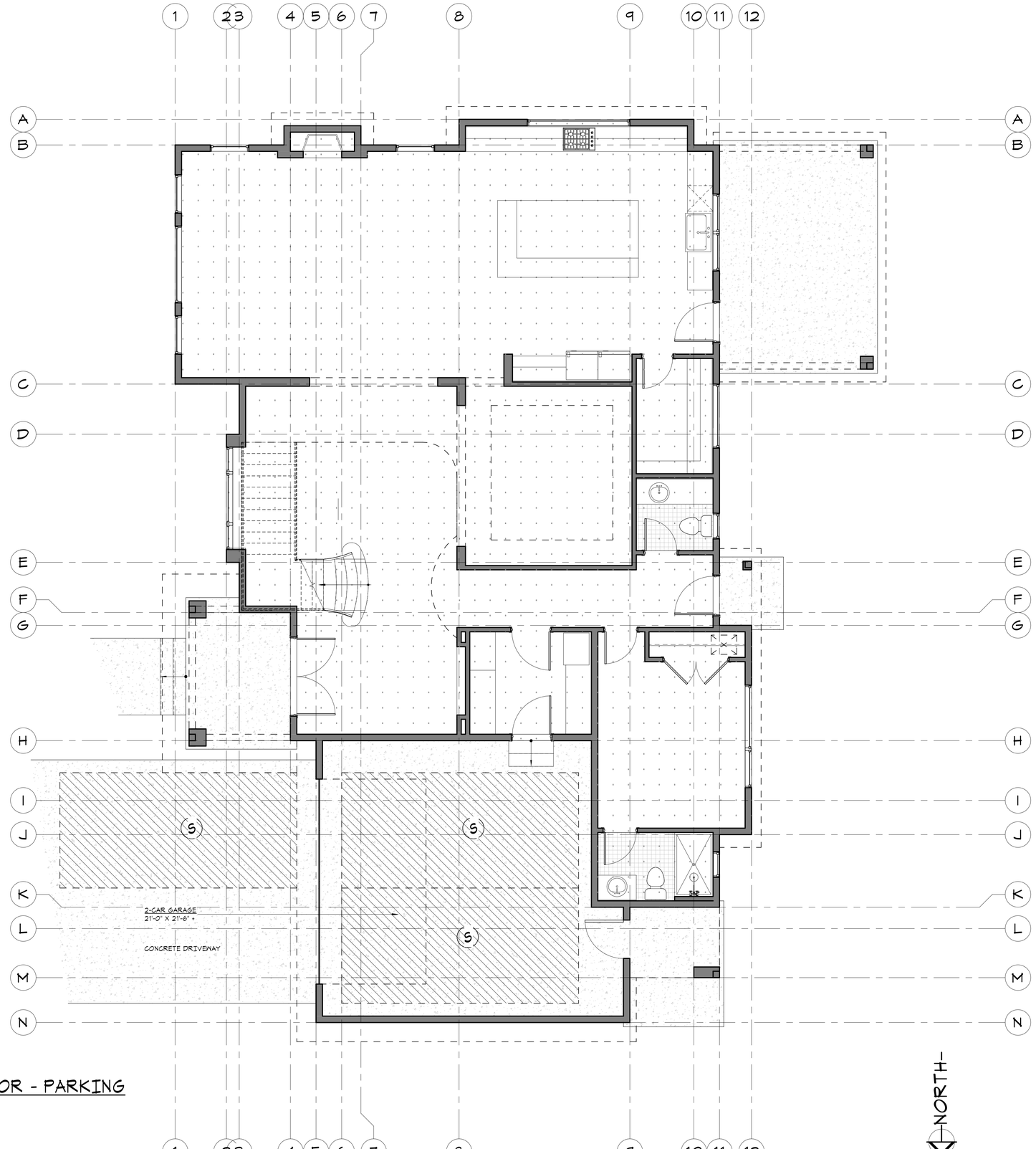
A. EACH SINGLE-FAMILY DWELLING WITH A GROSS FLOOR AREA OF 3,000 SQUARE FEET OR MORE SHALL HAVE AT LEAST THREE PARKING SPACES SUFFICIENT IN SIZE TO PARK A PASSENGER AUTOMOBILE; PROVIDED, AT LEAST TWO OF THE STALLS SHALL BE COVERED STALLS.

STANDARD PARKING STALL (9' X 18.5'):



PROVIDED PARKING:
TWO (2) STANDARD SIZE COVERED PARKING SPACES IN THE GARAGE.
DRIVEWAY CONTAINS A MINIMUM OF ONE (1) STANDARD PARKING STALL.

PARKING STALLS



MAIN FLOOR - PARKING

SCALE: 1/4" = 1'-0"

NORTH

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PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022

DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:

PARKING

PROJECT NUMBER:
21257

SHEET NUMBER:
A2.2

TYPICAL FLOOR NOTES:

1. INSTALL SMOKE DETECTORS IN ALL SLEEPING ROOMS AND AT AREAS ADJACENT TO SLEEPING ROOMS, AND AT CEILING HEIGHT CHANGES GREATER THAN 24". SMOKE DETECTORS TO BE HARD-WIRED AND INTERCONNECTED, WITH BATTERY BACK-UP PER CODE.
2. INSTALL CARBON MONOXIDE SENSORS ADJACENT TO SLEEPING AREAS.
3. ALL INTERIOR WALLS TO BE 2x4 @ 16" O.C. (U.N.O.)
4. ALL EXTERIOR WALLS TO BE 2x6 @ 16" O.C. (U.N.O.)
5. MAIN FLOOR HEADERS PER STRUCTURAL @ 9'-0" A.F.F. (U.N.O.)
6. WINDOW SIZES ARE NOMINAL ROUGH OPENING, WIDTH AND HEIGHT.
7. DOOR SIZES NOTED ARE SLABS NOT ROUGH OPENINGS
8. PROVIDE FIREBLOCKING AT ALL PLUMBING OPENINGS.
9. PROVIDE SOLID BLOCKING OVER SUPPORTS.
10 WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR-CEILING ASSEMBLY, DRAFTSTOPS SHALL BE INSTALLED SO THAT THE AREA OF CONCEALED SPACE DOES NOT EXCEED 1000 SF. DRAFTSTOPPING SHALL DIVIDE THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS AND SHALL BE OF 1/2" GYP BOARD OR OTHER APPROVED MATERIALS INSTALLED PARALLEL TO THE FLOOR FRAMING MEMBERS PER CODE.
11. PROVIDE FIREBLOCKING TO CUT OFF ALL CONCEALED HORIZONTAL AND VERTICAL DRAFT OPENINGS AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STOIRES, AND BETWEEN A TOP STORY AND THE ROOF SPACE. FIREBLOCKING SHALL CONSIST OF NOT LESS THAN 2" NOMINAL LUMBER OR OTHER APPROVED MATERIAL.
12. ASPHALT-SATURATED FELT FREE FROM HOLES OR BREAKS, WEIGHING NOT LESS THAN 14 POUNDS PER 100 SQUARE FEET AND COMPLYING WITH ASTM D 226 OR OTHER APPROVED WEATHER RESISTANT MATERIAL SHALL BE APPLIED OVER SHEATHING OF ALL EXTERIOR WALLS. APPROVED ALTERNATIVE WEATHERPROOF MEMBRANES SHALL BE USED FOR OPEN JOINT RAIN SCREEN SIDING. WEATHER RESISTANT MATERIALS SHALL BE APPLIED HORIZONTALLY PERMANUFACTURERS RECOMMENDATIONS, WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES AND NOT LESS THAN 6 INCHES WHERE JOINTS OCCUR PER CODE.
13. APPROVED CORROSION-RESISTIVE FLASHING SHALL BE PROVIDED IN THE EXTERIOR WALL ENVELOPE IN SUCH A MANNER AS TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDINGS STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL SURFACE AND SHALL BE INSTALLED TO PREVENT WATER FROM REENTERING THE EXTERIOR WALL ENVELOPE. FLASHING SHALL BE INSTALLED AT, BUT NOT LIMITED TO THE FOLLOWING LOCATIONS:
-THE TOP OF ALL EXTERIOR WINDOW & DOOR OPENINGS
-INTERSECTIONS OF FRAME WALLS AND MASONRY OR STUCCO
-UNDER MASONRY, WOOD OR METAL COPINGS AND SILLS
-CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM
-WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL
-AT WALL AND ROOF OR SOFFIT INTERSECTIONS
-AT BUILT-IN GUTTERS
14. EXTERIOR LOCATIONS FOR ENVIRONMENTAL AIR DUCT EXHAUST & INTAKE OPENINGS TO BE A MINIMUM OF 3'-0" FROM PROPERTY LINE & MINIMUM 3'-0" FROM BUILDING OPENINGS. EQUIP ALL DUCTS W/ BACK-DRAFT DAMPERS.
15. AIR EXHAUST & INTAKE OPENINGS THAT TERMINATE OUTDOORS SHALL BE PROTECTED W/ CORROSION RESISTANT SCREENS, LOUVERS, OR GRILLS W/ 1/4" MINIMUM & 1/2" MAX OPENINGS IN ANY DIMENSION. OPENINGS SHALL BE PROTECTED AGAINST LOCAL WEATHER CONDITIONS PER 2015 IRC.
16. DUCTS FOR KITCHEN RANGES SHALL BE OF METAL AND BE EQUIPPED W/ BACK-DRAFT DAMPERS PER CODE.
17. ALL INTERIOR FINISHES TO MEET MINIMUM FLAME SPREAD INDEX AND SMOKE DEVELOPMENT INDEX AS REQUIRED BY 2015 IRC.
18. UNDER FLOOR CLEANOUT NOT MORE THAN 20' FROM ACCESS DOOR WITH AN UNOBSTRUCTED 30" WIDE X 18" HIGH PATH PATHWAY. CLEANOUTS ARE ACCESSIBLE. 12" CLEARANCE REQUIRED AT LINES LESS THAN OR EQUAL TO 2', 18" CLEARANCE AT LINES GREATER THAN 2'. (UPC 707.9)
19. GLAZING IN ALL FIXED AND OPERABLE PANELS OF SWINGING, SLIDING AND BIFOLD DOORS SHALL BE CONSIDERED A HAZARDOUS LOCATION, SAFETY GLAZING.

GARAGE NOTES:

1. GARAGES SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NOT LESS THAN 5/8" TYPE X GWB APPLIED TO THE GARAGE SIDE. WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY, THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY NOT LESS THAN 5/8" TYPE X GYPSUM BOARD OR EQUIVALENT.
2. OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH SOLID WOOD DOORS NOT LESS THAN 1 3/8" IN THICKNESS, SOLID OR HONEYCOMB CORE STEEL DOORS NOT LESS THAN 1 3/8" THICK, OR 20-MINUTE FIRE-RATED DOORS.
3. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS OR CEILINGS SEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO. 26 GAGE SHEET STEEL OR OTHER APPROVED MATERIALS AND SHALL HAVE NO OPENINGS INTO THE GARAGE. IRC R302.5.1
4. IN SIESMIC ZONES 3 & 4, WATER HEATERS SHALL BE ANCHORED TO RESIST HORZ. DISPLACEMENT DUE TO EARTHQUAKE MOTION. STRAPPING SHALL BE @ POINTS WITHIN THE UPPER ONE THIRD AND LOWER ONE THIRD PER UPC SEC. 510.5
5. PROVIDE OUTDOOR COMBUSTION AIR FOR WATER HEATER
6. GARAGE FLOOR SURFACES SHALL BE OF APPROVED NONCOMBUSTIBLE MATERIAL AND THE AREA USED FOR THE PARKING OF AUTOMOBILES OR OTHER VEHICLES SHALL BE SLOPED TO FACILITATE THE MOVEMENT OF LIQUIDS TO A DRAIN OR TOWARD THE MAIN VEHICLE ENTRY DOORWAY.

AREA SUMMARY:		
MAIN FLOOR:	2 025	SF
UPPER FLOOR:	1 991	SF
LIVING/HEATED SPACE:	4 016	SF
GARAGE:	500	SF
FRONT PORCH:	42	SF
CONCRETE LANDING:	63	SF
COVERED PATIO:	210	SF

NOTE:
REFER TO STRUCTURAL SHEETS FOR SHEAR WALL SCHEDULE AND ENGINEERING PLAN WHICH CONTAIN REFERENCES AND/OR INSTRUCTIONS PERTAINING TO EACH SHEAR WALL INDICATED IN THIS PLAN

NOTE:
EACH DOOR TO BE UNDERCUT A MINIMUM OF 1/2-INCH TO ASSURE FREE FLOW OF FRESH AIR THROUGHOUT HABITABLE ROOMS

NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

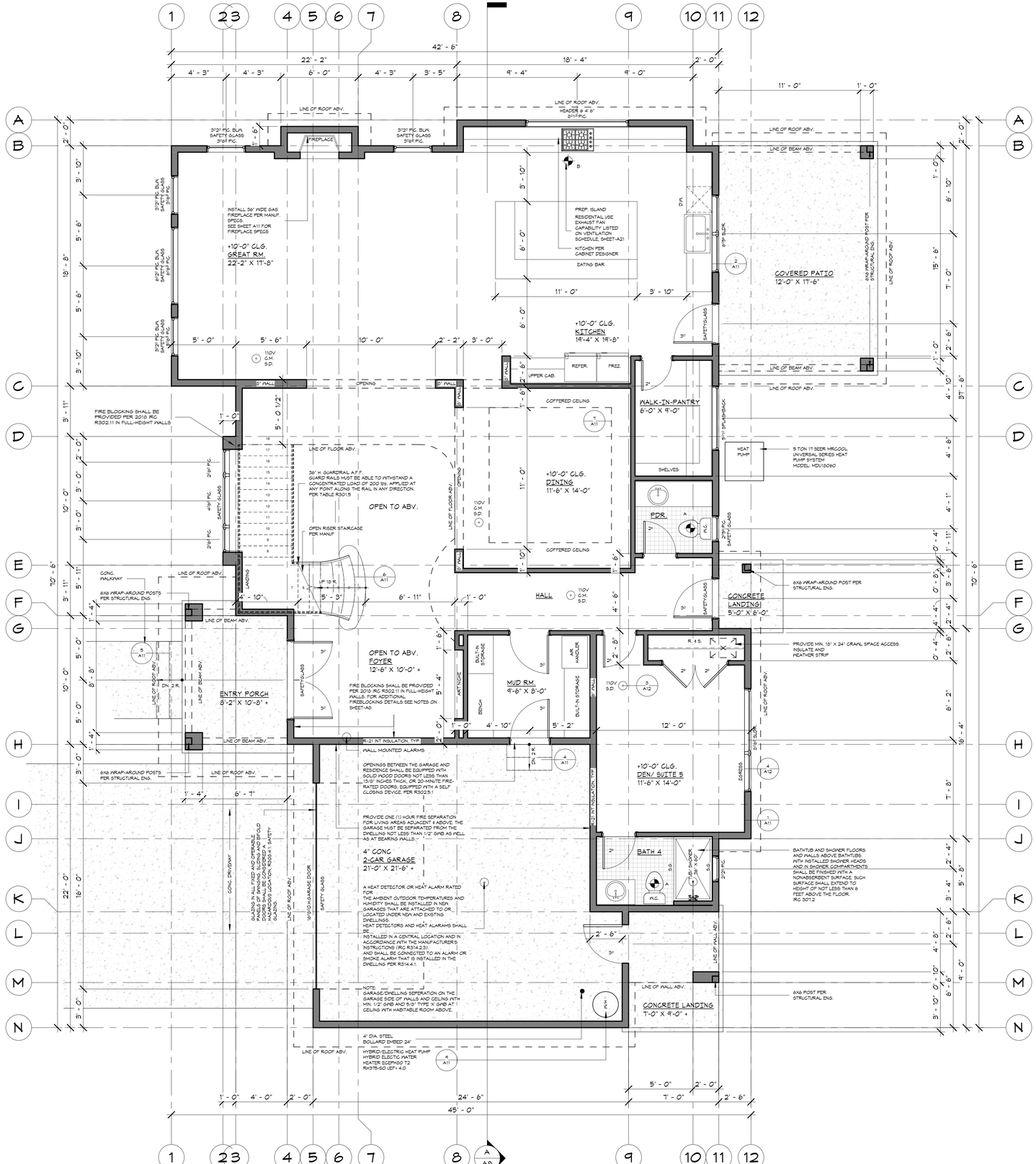
NOTE:
THE DOOR IN THE DWELLIN/GARAGE SEPARATION MUST BE EQUIPPED
WITH A SELF-CLOSING OR AUTOMATED CLOSING DEVICE.
PER IRC 302.5.1

FOR SMOKE & CARBON MONOXIDE ALARMS NOTES SEE SHEET A5.

MAIN FLOOR PLAN

SCALE: 1/4" = 1'-0"

NORTH



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PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 5021900790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022
DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:

MAIN FLOOR PLAN

PROJECT NUMBER:
21257

SHEET NUMBER:
A3

TYPICAL FLOOR NOTES:

1. INSTALL SMOKE DETECTORS IN ALL SLEEPING ROOMS AND AT AREAS ADJACENT TO SLEEPING ROOMS, AND AT CEILING HEIGHT CHANGES GREATER THAN 24". SMOKE DETECTORS TO BE HARD-WIRED AND INTERCONNECTED, WITH BATTERY BACK-UP PER CODE.
2. INSTALL CARBON MONOXIDE SENSORS ADJACENT TO SLEEPING AREAS.
3. ALL INTERIOR WALLS TO BE 2x4 @ 16" O.C. (U.N.O.)
4. ALL EXTERIOR WALLS TO BE 2x6 @ 16" O.C. (U.N.O.)
5. UPPER FLOOR HEADERS PER STRUCTURAL @ 8'-0" A.F.F. (U.N.O.)
6. WINDOW SIZES ARE NOMINAL ROUGH OPENING, WIDTH AND HEIGHT.
7. DOOR SIZES NOTED ARE SLABS NOT ROUGH OPENINGS
8. PROVIDE FIREBLOCKING AT ALL PLUMBING OPENINGS.
9. PROVIDE SOLID BLOCKING OVER SUPPORTS.
10. WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR-CEILING ASSEMBLY, DRAFTSTOPS SHALL BE INSTALLED SO THAT THE AREA OF CONCEALED SPACE DOES NOT EXCEED 1000 SF. DRAFTSTOPPING SHALL DIVIDE THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS AND SHALL BE OF 1/2" GYP BOARD OR OTHER APPROVED MATERIALS INSTALLED PARALLEL TO THE FLOOR FRAMING MEMBERS PER CODE.
11. PROVIDE FIREBLOCKING TO CUT OFF ALL CONCEALED HORIZONTAL AND VERTICAL DRAFT OPENINGS AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STOIRES, AND BETWEEN A TOP STORY AND THE ROOF SPACE. FIREBLOCKING SHALL CONSIST OF NOT LESS THAN 2" NOMINAL LUMBER OR OTHER APPROVED MATERIAL.
12. ASPHALT-SATURATED FELT FREE FROM HOLES OR BREAKS, WEIGHING NOT LESS THAN 14 POUNDS PER 100 SQUARE FEET AND COMPLYING WITH ASTM D 226 OR OTHER APPROVED WEATHER RESISTANT MATERIAL SHALL BE APPLIED OVER SHEATHING OF ALL EXTERIOR WALLS. APPROVED ALTERNATIVE WEATHERPROOF MEMBRANES SHALL BE USED FOR OPEN JOINT RAIN SCREEN SIDING. WEATHER RESISTANT MATERIALS SHALL BE APPLIED HORIZONTALLY PERMANUFACTURERS RECOMMENDATIONS, WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES AND NOT LESS THAN 6 INCHES WHERE JOINTS OCCUR PER CODE.
13. APPROVED CORROSION-RESISTIVE FLASHING SHALL BE PROVIDED IN THE EXTERIOR WALL ENVELOPE IN SUCH A MANNER AS TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDINGS STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL SURFACE AND SHALL BE INSTALLED TO PREVENT WATER FROM REENTERING THE EXTERIOR WALL ENVELOPE. FLASHING SHALL BE INSTALLED AT, BUT NOT LIMITED TO THE FOLLOWING LOCATIONS:
-THE TOP OF ALL EXTERIOR WINDOW & DOOR OPENINGS
-INTERSECTIONS OF FRAME WALLS AND MASONRY OR STUCCO
-UNDER MASONRY, WOOD OR METAL COPINGS AND SILLS
-CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM
-WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL
-AT WALL AND ROOF OR SOFFIT INTERSECTIONS
-AT BUILT-IN GUTTERS
14. EXTERIOR LOCATIONS FOR ENVIRONMENTAL AIR DUCT EXHAUST & INTAKE OPENINGS TO BE A MINIMUM OF 3'-0" FROM PROPERTY LINE & MINIMUM 3'-0" FROM BUILDING OPENINGS. EQUIP ALL DUCTS W/ BACK-DRAFT DAMPERS.
15. AIR EXHAUST & INTAKE OPENINGS THAT TERMINATE OUTDOORS SHALL BE PROTECTED W/ CORROSION RESISTANT SCREENS, LOUVERS, OR GRILLS W/ 1/4" MINIMUM & 1/2" MAX OPENINGS IN ANY DIMENSION. OPENINGS SHALL BE PROTECTED AGAINST LOCAL WEATHER CONDITIONS PER 2015 IRC.
16. DUCTS FOR KITCHEN RANGES SHALL BE OF METAL AND BE EQUIPPED W/ BACK-DRAFT DAMPERS PER CODE.
17. ALL INTERIOR FINISHES TO MEET MINIMUM FLAME SPREAD INDEX AND SMOKE DEVELOPMENT INDEX AS REQUIRED BY 2015 IRC.
18. UNDER FLOOR CLEANOUT NOT MORE THAN 20' FROM ACCESS DOOR WITH AN UNOBSTRUCTED 30" WIDE X 18" HIGH PATH PATHWAY. CLEANOUTS ARE ACCESSIBLE, 12" CLEARANCE REQUIRED AT LINES LESS THAN OR EQUAL TO 2', 18" CLEARANCE AT LINES GREATER THAN 2'. (UPC 707.8)
19. GLAZING IN ALL FIXED AND OPERABLE PANELS OF SWINGING, SLIFDING AND BIFOLD DOORS SHALL BE CONSIDERED A HAZARDOUS LOCATION, SAFETY GLAZING.

AREA SUMMARY:

MAIN FLOOR:	2 025	SF
UPPER FLOOR:	1 991	SF
LIVING/HEATED SPACE:	4 016	SF
GARAGE:	500	SF
FRONT PORCH:	92	SF
CONCRETE LANDING:	63	SF
COVERED PATIO:	210	SF

NOTE:
REFER TO STRUCTURAL SHEETS FOR SHEAR WALL SCHEDULE AND ENGINEERING PLAN WHICH CONTAIN REFERENCES AND/OR INSTRUCTIONS PERTAINING TO EACH SHEAR WALL INDICATED IN THIS PLAN

NOTE:
EACH DOOR TO BE UNDERCUT A MINIMUM OF 1/2-INCH TO ASSURE FREE FLOW OF FRESH AIR THROUGHOUT HABITABLE ROOMS

NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

NOTE:
THE DOOR IN THE DWELLIN/GARAGE SEPARATION MUST BE EQUIPPED
WITH A SELF-CLOSING OR AUTOMATED CLOSING DEVICE.
PER IRC 302.5.1

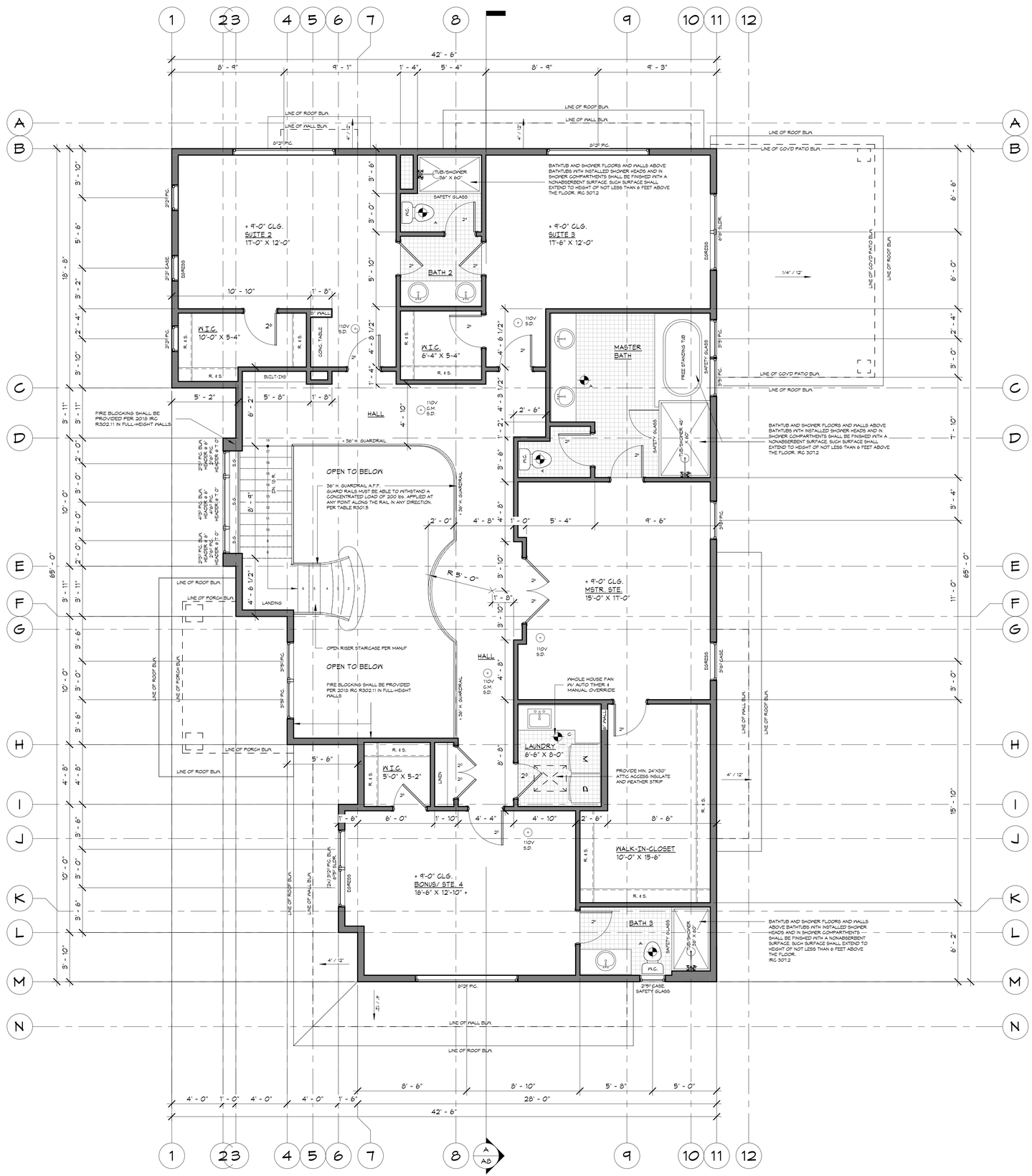
FOR SMOKE & CARBON MONOXIDE ALARMS NOTES SEE SHEET A5.

NOTE:
DUCT TO EXTERIOR. FOR INTERMITENT DISTRIBUTED

UPPER FLOOR PLAN

SCALE: 1/4" = 1'-0"

NORTH



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PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022
DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:

UPPER FLOOR PLAN

PROJECT NUMBER:
21257

SHEET NUMBER:
A4

ELEVATION NOTES:

1. VERIFY SHEAR WALL NAILING & HOLDOWNS PER PLAN PRIOR TO INSTALLING SIDING.

2. CAULK ALL EXTERIOR JOINTS & PENETRATIONS.

3. PROVIDE APPROVED CORROSION RESISTANT FLASHING AT EXTERIOR WALL ENVELOPE PER I.R.C. R703.8

4. PROVIDE FLASHING AT ROOF PENETRATIONS PER I.R.C. R905.2.8

5. PROVIDE WEATHER STRIPPING AT ALL EXTERIOR & GARAGE-INTERIOR DOORS.

6. PROVIDE CONTINUOUS GUTTERS & DOWNSPOUTS @ ALL EAVES, TYP.

7. ADDRESS OR HOUSE NUMBER TO BE POSTED AND PLAINLY VISIBLE FROM THE STREET FRONTAGE. MIN. 4" HEIGHT, 1/2" STROKE WIDTH AND CONTRASTING BACKGROUND.

8. PROVIDE STAIRWAY ILLUMINATION PER I.R.C. R303.6

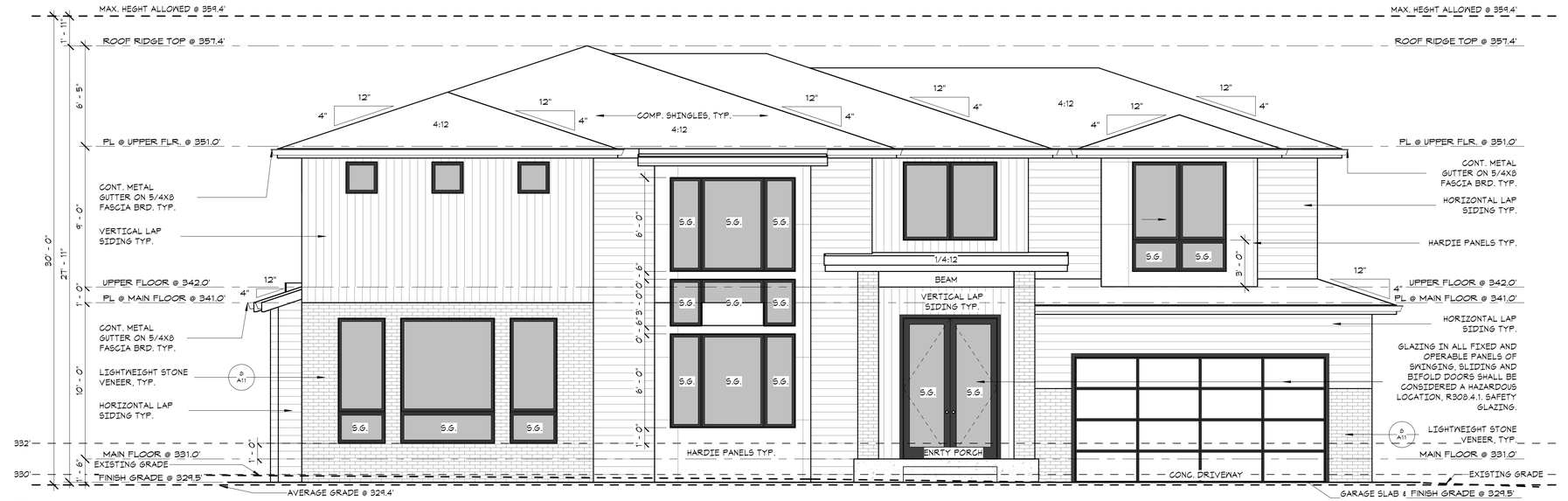
9. SEE SHEET A1 FOR ADDITIONAL NOTES.

10. PROVIDE SURFACE DRAINAGE 6" : 10' MIN. AWAY FROM HOUSE FOOTPRINT IRC R401.3

NOTE:
NO OPERABLE WINDOW SHALL BE INSTALLED LESS THAN 24 INCHES ABOVE FINISHED FLOOR THAT IS GREATER THAN 72 INCHES ABOVE THE FINISH GRADE OR OTHER SURFACE BELOW ON THE EXTERIOR OF THE BUILDING.

NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

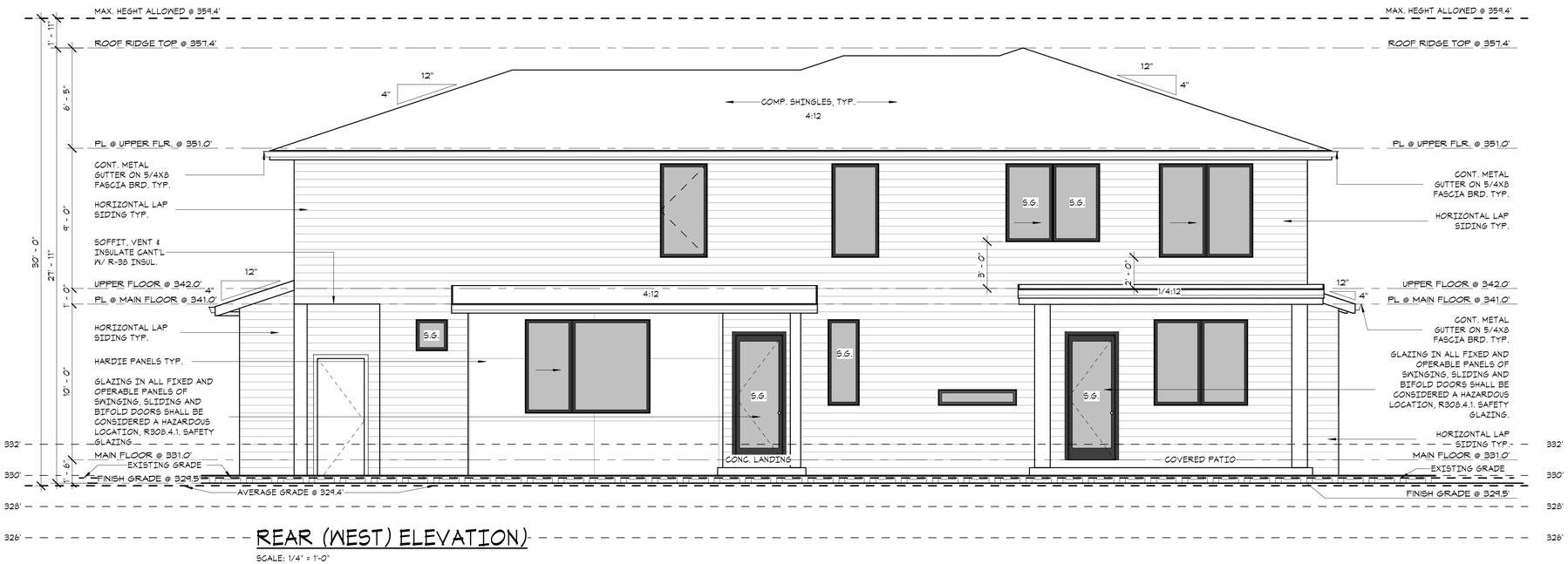
NOTE:
FOR HARDIE PANEL DETAILS SEE SHEET A13
FOR ARTISAN LAP SIDING DETAILS SEE SHEET A14



FRONT (EAST) ELEVATION

SCALE: 1/4" = 1'-0"

SMOKE & CARBON MONOXIDE ALARMS:
SMOKE AND CARBON MONOXIDE ALARMS MUST BE PROVIDED IN ALL REQUIRED LOCATIONS AND MUST BE:
* AUDIBLE IN ALL PARTS OF THE HOUSE
* INSTALLED PER MANUFACTURER'S INSTRUCTIONS
NEW HOUSES (IRC R314 & R315)
SMOKE ALARMS AND CARBON MONOXIDE ALARMS ARE REQUIRED AND MUST BE CONNECTED TO THE MAIN ELECTRICAL SYSTEM WITH BATTERY BACKUP.
CARBON MONOXIDE ALARMS ARE REQUIRED IN ALL NEW AND EXISTING HOMES, APARTMENTS, CONDOMINIUMS, AND OTHER MULTI-FAMILY UNITS.
REQUIRED LOCATIONS
* SMOKE ALARMS SHALL BE LOCATED IN EACH SLEEPING ROOM AND IN NAPPING AREAS IN A FAMILY HOME CHILD CARE.
* SMOKE ALARMS AND CARBON MONOXIDE ALARMS SHALL BE LOCATED OUTSIDE EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
* SMOKE ALARMS AND CARBON MONOXIDE ALARMS SHALL BE LOCATED ON EVERY FLOOR LEVEL, INCLUDING BASEMENTS (DOES NOT INCLUDE CRAWLSPACE AND UNINHABITABLE ATTICS).
* IN SPLIT LEVEL FLOOR PLANS, AT THE UPPER LEVEL, PROVIDED THERE IS NO INTERVENING DOOR BETWEEN ADJACENT LEVELS AND THE LOWER LEVEL IS LESS THAN A FULL STORY BELOW THE UPPER LEVEL
* A CARBON MONOXIDE ALARM IS REQUIRED IN A BEDROOM WHEN A FUELBURNING
APPLIANCE IS INSTALLED IN THE BEDROOM OR ITS ATTACHED BATHROOM.
* A COMBINATION ALARM (COMBINED SMOKE AND CARBON MONOXIDE ALARM) IS ACCEPTABLE IN ANY REQUIRED LOCATION.
*WALL MOUNTED ALARMS MUST BE NOT MORE THAN 12 INCHES FROM THE ADJOINING CEILING SURFACE.
* AVOID PLACING ALARMS LESS THAN 3 FEET FROM SUPPLY REGISTERS OF A FORCED AIR HEATING OR COOLING SYSTEM AND DO NOT PLACE ALARMS IN THE DIRECT AIRFLOW OF THE REGISTERS.
* AVOID PLACING ALARMS WITHIN 3 FEET HORIZONTALLY FROM DOORS TO BATHROOMS CONTAINING A BATHTUB OR SHOWER.
* DO NOT PLACE ALARMS IN SPACES WHERE TEMPERATURES MAY BE ABOVE OR BELOW THE ALARM'S OPERATING TEMPERATURE RANGE.
* DO NOT PLACE ALARMS WITHIN 3 FEET OF THE BLADES OF A CEILING FAN.
* ALARMS IN PEAKED OR SLOPED CEILINGS MUST BE WITHIN 3 FEET OF THE PEAK, MEASURED HORIZONTALLY, BUT NOT IN THE HIGHEST 4 INCHES OF THE CEILING, MEASURED VERTICALLY.
A. PHOTOELECTRIC SMOKE ALARMS MUST NOT BE LESS THAN 6 FEET FROM A PERMANENT COOKING APPLIANCE.
B. IONIZATION SMOKE ALARMS WITH AN ALARM-SILENCING SWITCH MUST NOT BE LESS THAN 10 FEET FROM A PERMANENT COOKING APPLIANCE.
C. IONIZATION SMOKE ALARMS WITHOUT AN ALARM-SILENCING SWITCH MUST NOT BE LESS THAN 20 FEET FROM A PERMANENT COOKING APPLIANCE
CARBON MONOXIDE ALARM LOCATION LIMITATIONS
* DO NOT PLACE ALARMS DIRECTLY ABOVE OR BESIDE FUEL-BURNING APPLIANCES.
* DO NOT PLACE ALARMS IN DIRECT SUNLIGHT.
* DO NOT PLACE ALARMS IN LOW AREAS WHERE CHILDREN CAN REACH. DO NOT PLACE ALARMS BEHIND CURTAINS OR ANY STRUCTURE THAT MIGHT PREVENT CARBON MONOXIDE FROM REAGHING THE SENSOR.



REAR (WEST) ELEVATION

SCALE: 1/4" = 1'-0"

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PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022

DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:
FRONT AND REAR ELEVATIONS

PROJECT NUMBER:
21257

SHEET NUMBER:
A5

ELEVATION NOTES:

1. VERIFY SHEAR WALL NAILING & HOLDOWNS PER PLAN PRIOR TO INSTALLING SIDING.

2. CAULK ALL EXTERIOR JOINTS & PENETRATIONS.

3. PROVIDE APPROVED CORROSION RESISTANT FLASHING AT EXTERIOR WALL ENVELOPE PER I.R.C. R703.8

4. PROVIDE FLASHING AT ROOF PENETRATIONS PER I.R.C. R905.2.8

5. PROVIDE WEATHER STRIPPING AT ALL EXTERIOR & GARAGE-INTERIOR DOORS.

6. PROVIDE CONTINUOUS GUTTERS & DOWNSPOUTS @ ALL EAVES, TYP.

7. ADDRESS OR HOUSE NUMBER TO BE POSTED AND PLAINLY VISIBLE FROM THE STREET FRONTAGE, MIN. 4" HEIGHT, 1/2" STROKE WIDTH AND CONTRASTING BACKGROUND.

8. PROVIDE STAIRWAY ILLUMINATION PER I.R.C. R303.6

9. SEE SHEET A1 FOR ADDITIONAL NOTES.

10. PROVIDE SURFACE DRAINAGE 6" : 10' MIN. AWAY FROM HOUSE FOOTPRINT IRC R401.3

NOTE:
NO OPERABLE WINDOW SHALL BE INSTALLED LESS THAN 24 INCHES ABOVE FINISHED FLOOR THAT IS GREATER THAN 72 INCHES ABOVE THE FINISH GRADE OR OTHER SURFACE BELOW ON THE EXTERIOR OF THE BUILDING.

NOTE:
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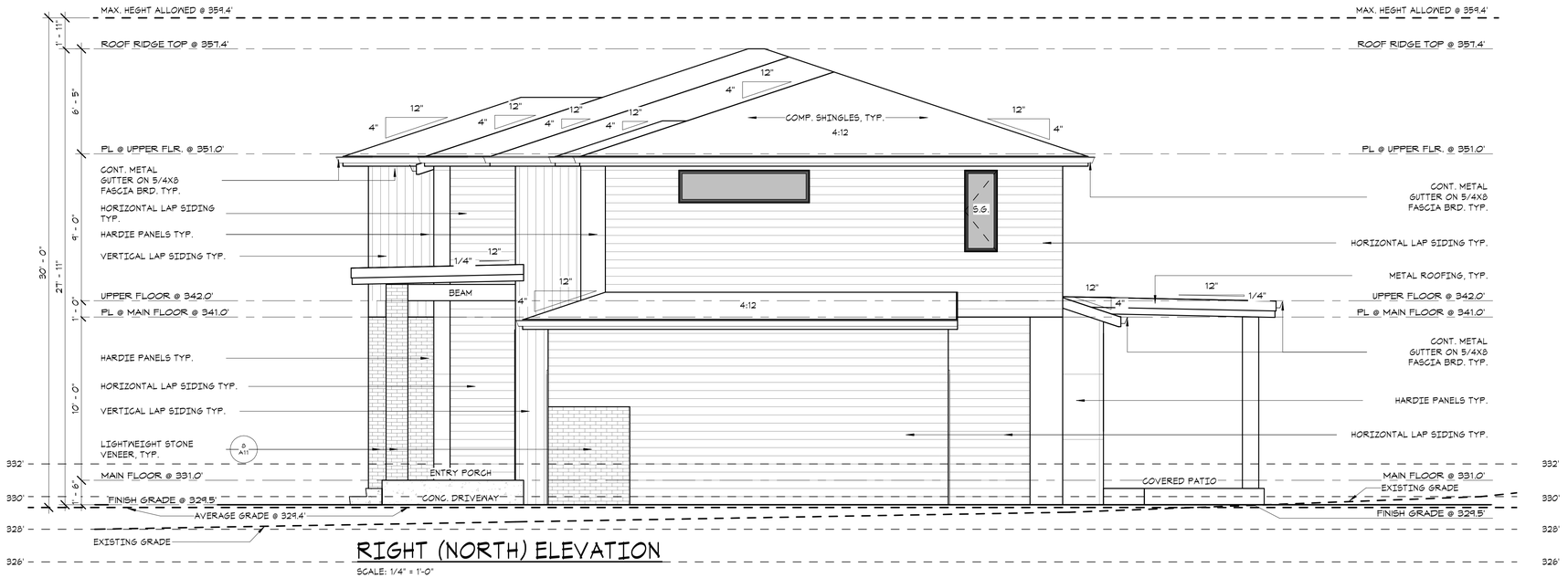
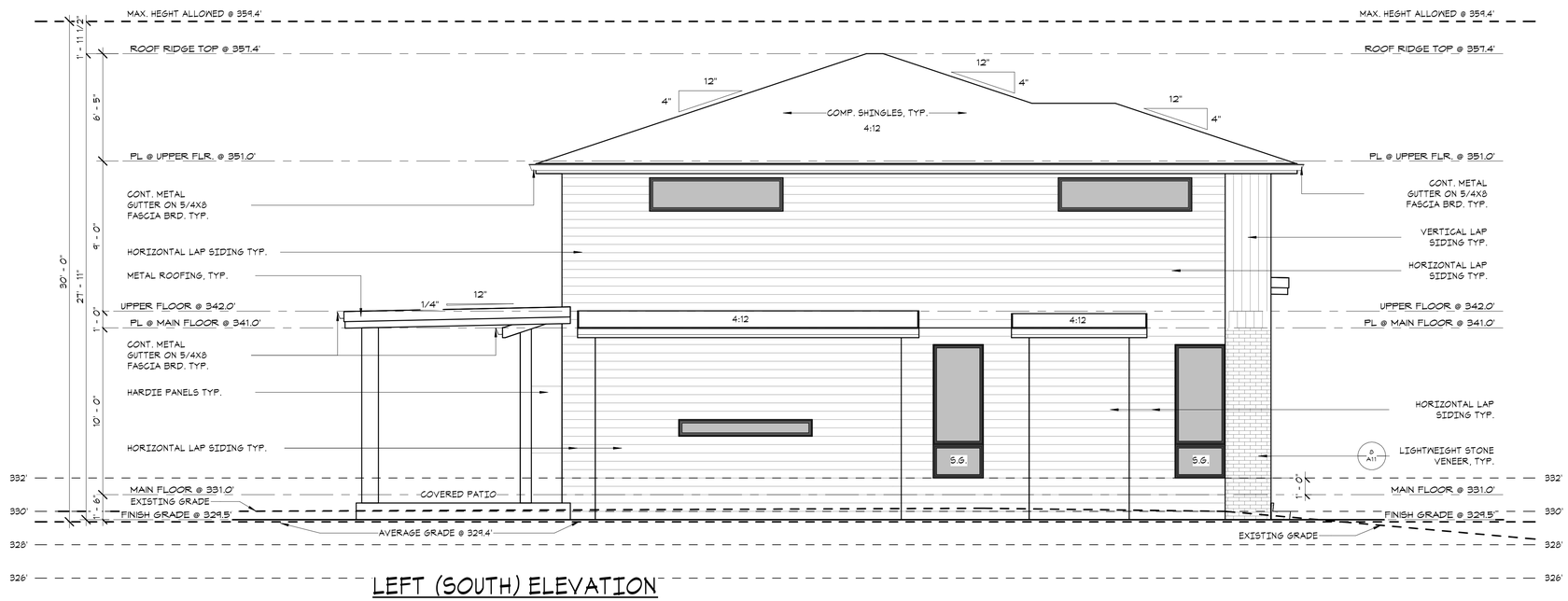
NOTE:
FOR HARDIE PANEL DETAILS SEE SHEET A13
FOR ARTISAN LAP SIDING DETAILS SEE SHEET A14



RIGHT (NORTH) ELEVATION

SCALE: 1/4" = 1'-0"



LEFT (SOUTH) ELEVATION

SCALE: 1/4" = 1'-0"

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PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022

DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

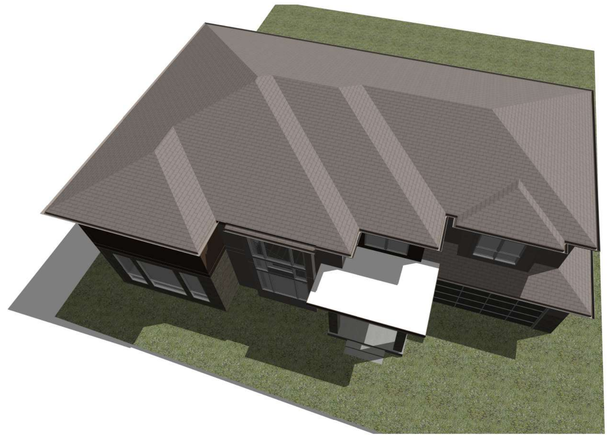
SHEET TITLE:

LEFT AND RIGHT ELEVATIONS

PROJECT NUMBER:
21257

SHEET NUMBER:
A6

PERSPECTIVE VIEW: FRONT VIEW



PERSPECTIVE VIEW: BIRD EYE VIEW

PERSPECTIVE VIEW: REAR ELEVATION

PERSPECTIVE VIEW: REAR/ LEFT ELEVATION

PERSPECTIVE VIEW:

PERSPECTIVE VIEWS ARE FOR REFERENCE ONLY.
THEY SHOULD NOT BE USED TO DETERMINE ANY PORTION OF THE CONSTRUCTION OTHER THAN GENERAL MATERIAL APPEARANCE. REFER TO ELEVATION SHEETS FOR DETAILS.

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SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022

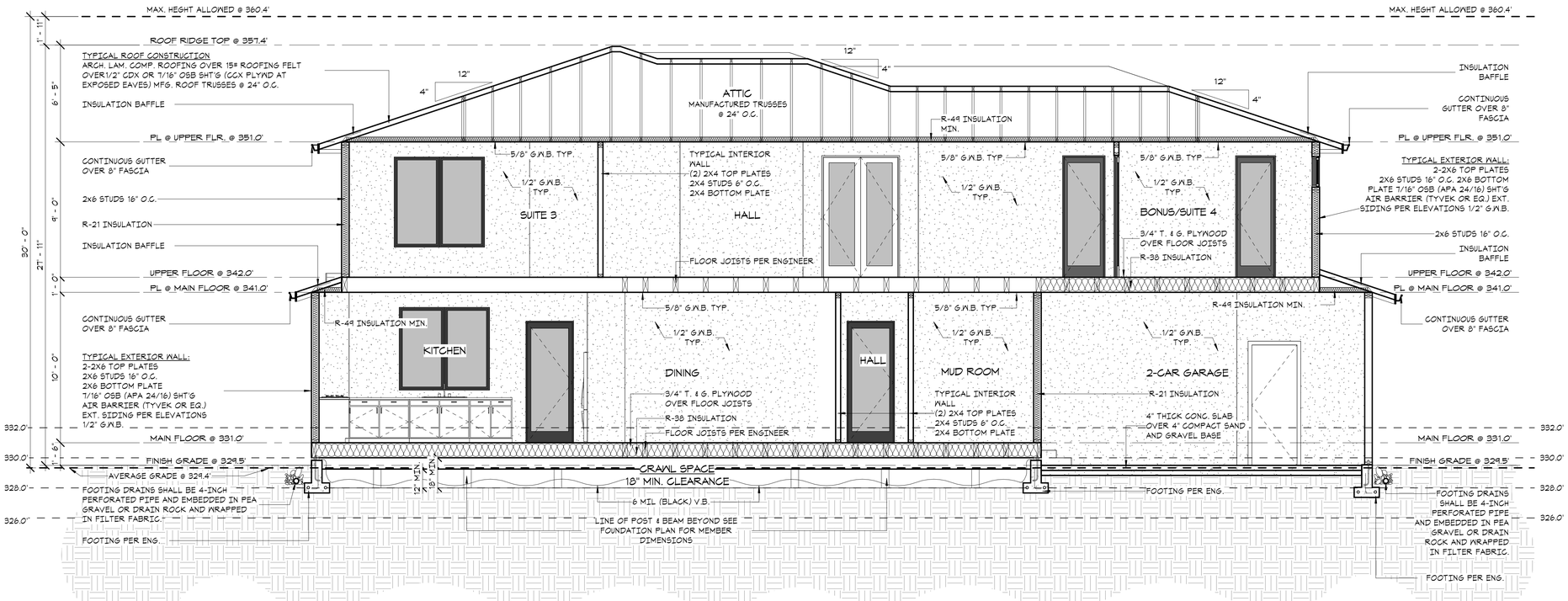
DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:

PERSPECTIVE VIEWS

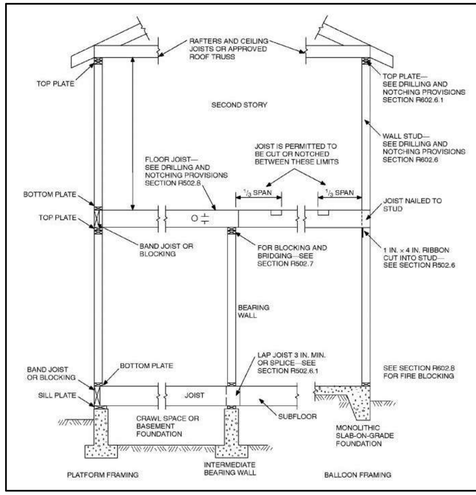
PROJECT NUMBER:
21257

SHEET NUMBER:
A7



BUILDING CROSS-SECTION - 'A'

SCALE: 1/4" = 1'-0"



2018 IRC SECTION R302.11 FIREBLOCKING.
IN COMBUSTIBLE CONSTRUCTION, FIREBLOCKING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS(BOTH VERTICAL AND HORIZONTAL) AND TO FORM AN EFFECTIVE FIRE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE. FIREBLOCKING SHALL BE PROVIDED IN WOOD-FRAME CONSTRUCTION IN THE FOLLOWING LOCATIONS:
1) IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS AS FOLLOWS:
A) VERTICALLY AT THE CEILING AND FLOOR LEVELS.
B) HORIZONTALLY AT INTERVALS NOT EXCEEDING 10 FEET.
2) AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS AND COVE CEILINGS.
3) IN CONCEALED SPACES AT STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS SHALL COMPLY WITH SECTION R302.7.
4) AT OPENINGS AROUND VENTS, PIPES, DUCTS, CABLES AND WIRES AT CEILING AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION. THE MATERIAL FILLING THIS ANNULAR SPACE SHALL NOT BE REQUIRED TO MEET THE ASTM E 136 REQUIREMENTS.
5) FOR THE FIREBLOCKING OF CHIMNEYS AND FIREPLACES, SEE SECTION R1003.19.
6) FIREBLOCKING OF CORNICES OF A TNO-FAMILY DWELLING IS REQUIRED AT THE LINE OF DWELLING UNIT SEPARATION. FIRE BLOCKING MATERIALS SHALL CONSIST OF MATERIAL LISTED IN SECTION R302.11.1. LOOSE-FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED. THE INTEGRITY OF ALL FIREBLOCKS SHALL BE MAINTAINED. DRAFTSTOPPING: WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW A CONCEALED SPACE OF A FLOOR/CEILING ASSEMBLY, DRAFTSTOPS SHALL BE INSTALLED SO THAT THE AREA OF THE CONCEALED SPACE DOES NOT EXCEED 1000 SQUARE FEET. DRAFTSTOPS SHALL DIVIDE THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS. DRAFTSTOPPING MATERIALS SHALL CONSIST OF MATERIALS LISTED IN SECTION R302.12.1. DRAFTSTOPPING MATERIALS SHALL NOT BE LESS THAN S INCH GYPSUM, 3/8 INCH WOOD STRUCTURAL PANELS OR OTHER APPROVED MATERIALS ADEQUATELY SUPPORTED. THE INTEGRITY OF THE DRAFTSTOPS SHALL BE MAINTAINED.

CERTIFICATE (WSEC R401.3):
A PERMANENT CERTIFICATE SHALL BE COMPLETED AND POSTED ON OR WITHIN THREE FEET OF ELECTRICAL DISTRIBUTION PANEL. THE CERTICATE MUST LIST THE ENERGY FEATURES OF THE STRUCTURE.

DUCTS (WSEC R403.2.2):
DUCTS MUST BE LEAK TESTED IN ACCORDANCE WITH WSU RS-33 USING THE MAXIMUM DUCT LEAKAGE RATES SPECIFIED. DUCT TIGHTNESS MUST BE VERIFIED BY EITHER THE POSTCONSTRUCTION TEST OR ROUGH-IN TEST PER WSEC R403.2.2. TOTAL LEAKAGE MUST BE LESS THAN OR EQUAL TO 4 CFM PER 100 S.F. OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1" W.G. (25 Pa) ACROSS THE ENTIRE SYSTEM. PROVIDE GENERAL NOTES TO ADDRESS THIS REQUIREMENT.

PER WSEC R402.4, THE BUILDING THERMAL ENVELOPE SHALL BE CONSTRUCTED TO LIMIT AIR LEAKAGE(3). THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL (R402.4.1.2).

PER WSEC R403.1.1, AT LEAST ONE THERMOSTAT PER DWELLING UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE.

PER WSEC R404.1, A MINIMUM OF 90 PERCENT OF THE LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS.

DUCTS (503.10.1)
* INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOOR OR CEILING CANNOT DISPLACE REQUIRED INSULATION.
* BUILDING CAVITIES CANNOT BE USED AS DUCTS DUCT TESTING (503.10.2)
* DUCTS LOCATED OUTSIDE THE CONDITIONED SPACE MUST BE TESTED.

NOTE:
REFER TO STRUCTURAL ENGINEERING SHEETS FOR FOUNDATION/CRAWL SPACE VENTILATION.

SECTION 312.12: RODENT PROOFING:
STRAINER PLATES ON DRAIN INLETS SHALL BE DESIGNED AND INSTALLED SO THAT NO OPENING EXCEEDS 1/2 OF AN INCH IN THE LEAST DIMENSION.
312.12.1:
METER BOXES SHALL BE CONSTRUCTED IN SUCH A MANNER THAT RATS CANNOT ENTER A BUILDING BY FOLLOWING THE SERVICE PIPES FROM THE BOX INTO THE BUILDING.
312.12.2: METAL COLLARS.
IN OR ON BUILDINGS WHERE OPENINGS HAVE BEEN MADE IN WALLS, FLOORS, OR CEILINGS FOR THE PASSAGE OF PIPES, SUCH OPENINGS SHALL BE CLOSED AND PROTECTED BY THE INSTALLATION OF APPROVED METAL COLLARS SECURELY FASTENED TO THE ADJOINING STRUCTURE.
312.12.3: TUB WASTE OPENINGS.
TUB WASTE OPENINGS IN FRAMED CONSTRUCTION TO CRAWL SPACES AT OR BELOW THE FIRST FLOOR SHALL BE PROTECTED BY THE INSTALLATION OF APPROVED METAL COLLARS OR METAL SCREEN SECURELY FASTENED TO THE ADJOINING STRUCTURE WITH NO OPENING GREATER THAN 1/2 OF AN INCH IN THE LEAST DIMENSION.
* 2018 UNIFORM PLUMBING CODE WITH WASHINGTON STATE AMENDMENTS (UPC)

NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

NOTE:
FOR MORE DETAILS SEE STRUCTURAL ENGINEERING PLAN.

NOTE:
REFER TO STRUCTURAL SHEETS FOR SHEAR WALL SCHEDULE AND ENGINEERING PLAN WHIGH CONTAIN REFERENCES AND/OR INSTRUCTIONS PERTAINING TO EACH SHEAR WALL INDICATED IN THIS PLAN

URBAN DESIGN GROUP
15445 53 RD AVE. S. STE. 110 TUKWILA, WA 98188
(206) 838-8250 E-MAIL: URBANDESIGNCENTER@YAHOO.COM

PROJECT NAME:
SINGLE-FAMILY RESIDENCE
8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022
DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:
BUILDING CROSS-SECTION AND DETAILS

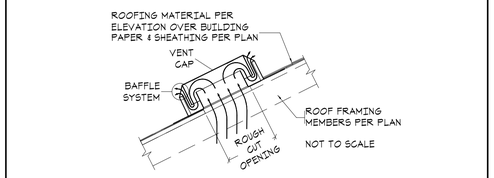
PROJECT NUMBER:
21257

SHEET NUMBER:
A8

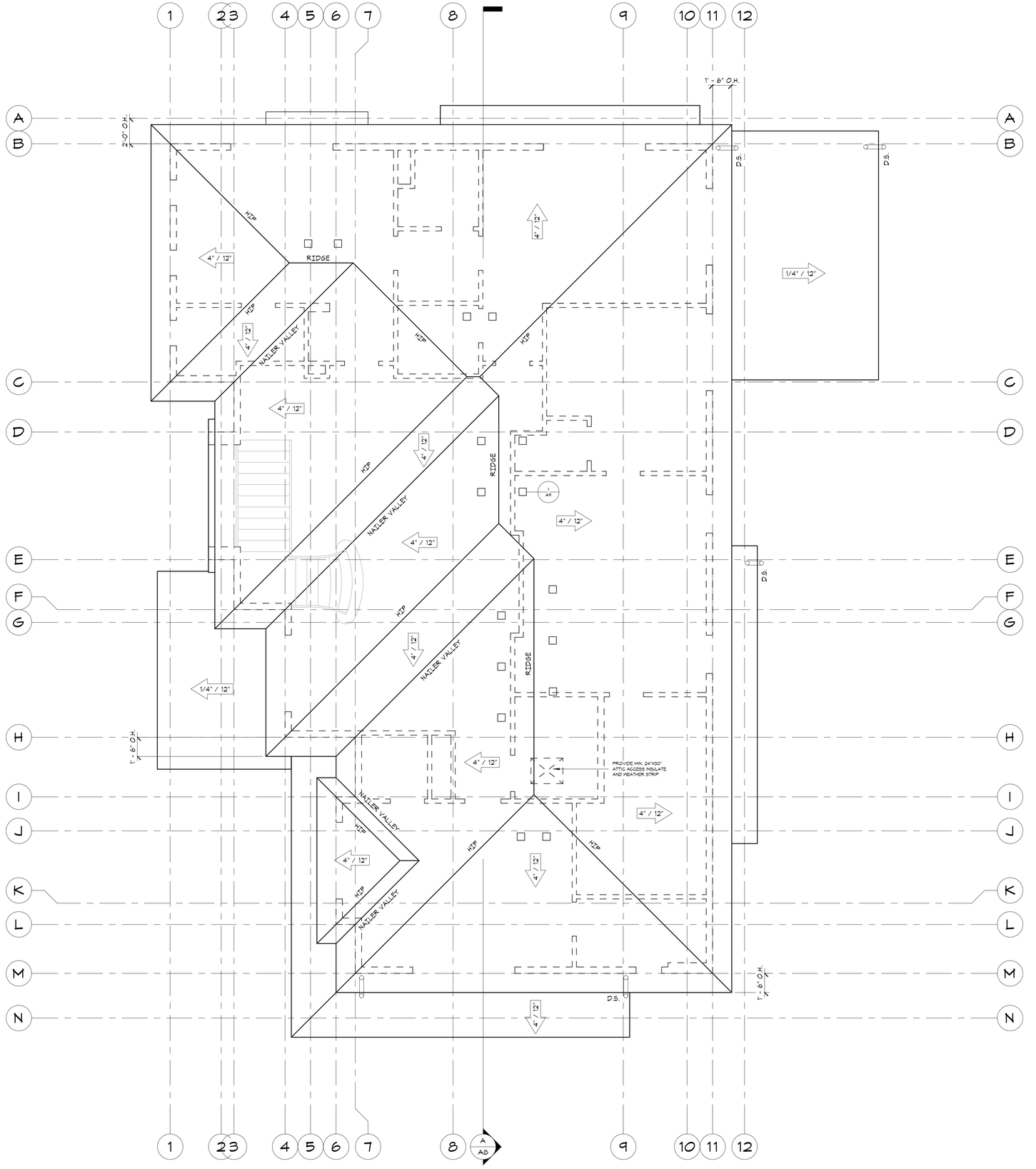
DOWNSPOUTS PER SITE PLAN C-1.

ROOF LAYOUT

SCALE: 1/4" = 1'-0"



1 HIGH ROOF VENTS



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SUBMITTED	-/-/2022
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DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:

ROOF
LAYOUT

PROJECT NUMBER:
21257

SHEET NUMBER:
A9

GLAZING SCHEDULE

ROOM	# OF WNDS.	WND. W.	WND. H.	MANUF.	FRAME TYPE	WDW. TYPE	MODEL NO.	AIR GAP	GAS	LO-E	U-VAL (1)	AREA	N.A.
MAIN FLOOR													
STAIRCASE	2	2,00	6,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	24,00	6,72
STAIRCASE	1	4,00	6,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	24,00	6,72
GREAT RM.	4	3,00	6,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	72,00	20,16
GREAT RM.	4	3,00	2,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	24,00	6,72
GREAT RM.	1	6,00	6,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	36,00	10,08
GREAT RM.	1	6,00	2,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	12,00	3,36
KITCHEN	1	8,00	1,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	8,00	2,24
KITCHEN	1	6,00	5,50	MILGARD	VINYL	SLIDER	5120	1/2"	AIR	YES	0,28	33,00	9,24
KITCHEN	1	3,00	8,00	MILGARD	VINYL	S.G.D.	5621	1/2"	AIR	YES	0,28	24,00	6,72
WALK-IN-PANTRY	1	5,00	1,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	5,00	1,40
PDR.	1	2,00	5,50	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	11,00	3,08
HALL	1	3,00	8,00	MILGARD	VINYL	S.G.D.	5621	1/2"	AIR	YES	0,28	24,00	6,72
DEN/SUITE 5	1	8,00	6,00	MILGARD	VINYL	SLIDER	5120	1/2"	AIR	YES	0,28	48,00	13,44
BATH 4	1	2,00	2,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	4,00	1,12
UPPER FLOOR													
BONUS/SUITE 4	1	6,00	5,00	MILGARD	VINYL	SLIDER	5120	1/2"	AIR	YES	0,28	30,00	8,40
BONUS/SUITE 4	2	3,00	2,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	12,00	3,36
OPEN TO BELOW	2	3,00	5,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	30,00	8,40
STAIRCASE	2	2,00	6,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	24,00	6,72
STAIRCASE	2	2,00	3,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	12,00	3,36
STAIRCASE	1	4,00	6,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	24,00	6,72
STAIRCASE	1	4,00	3,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	12,00	3,36
W.I.C.	1	2,00	2,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	4,00	1,12
SUITE 2	1	2,00	2,00	MILGARD	VINYL	CASE.	5521	1/2"	AIR	YES	0,28	4,00	1,12
SUITE 2	1	2,00	2,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	4,00	1,12
SUITE 2	1	8,00	2,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	16,00	4,48
SUITE 3	1	8,00	2,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	16,00	4,48
SUITE 3	1	6,00	6,00	MILGARD	VINYL	SLIDER	5120	1/2"	AIR	YES	0,28	36,00	10,08
MASTER BATH	2	3,00	5,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	30,00	8,40
MSTR. STE.	1	3,00	6,00	MILGARD	VINYL	PICTURE	5320	1/2"	AIR	YES	0,28	18,00	5,04
MSTR. STE.	1	3,00	6,00	MILGARD	VINYL	CASE.	5521	1/2"	AIR	YES	0,28	18,00	5,04
BATH 3	1	2,00	5,00	MILGARD	VINYL	CASE.	5521	1/2"	AIR	YES	0,28	10,00	2,80
												649,00	**181,72**
DOORS WITH MORE THAN 50% GLASS													
FOYER	2	3,00	8,00	MILGARD	VINYL	S.G.D.	5621	1/2"	AIR	YES	0,28	48,00	13,44
												DOORS WITH MORE THAN 50% GLASS-TOTAL:	**48,00**	**13,44**
												AVG. U-VALUE (VERTICAL GLASS):		**13,44**
SKYLIGHTS AND SKYWALLS													
												SKYLIGHT TOTAL:		
												AVG. U-VALUE (OVERHEAD GLASS):		
													AREA	UA
													697,00	195,16
													TOTAL 1	TOTAL 2
GLAZING % =	TOTAL 1	=					697,00	S.F.	=			17,36%		
	HEATED AREA						4016,00	S.F.						
AVG. U-VALUE =	UA TOTAL (TOT. 2)	=					195,16	UA	=				0,28	U-VALUE
	AREA TOTAL (TOT. 1)						697,00	A						
NON-LIVING SPACE WINDOWS:														

VENTILATION SCHEDULE

2018 WASHINGTON STATE ENERGY CODE		M1505.4.3(1) &(4)
SYMBOL	LOCATION	MINIMUM FAN REQUIREMENTS
A	Bath, Powder, Laundry	Min. 50 cfm @ 0.25" WG
B	Kitchen	Min. 100 cfm @ 0.25" WG (Range hood or down draft exhaust fan rated at min.100 cfm at 0.10" WG may be used for exhaust fan requirement.)
C	Whole House Fan	CFM = 128 (based on 4,016 s.f. floor area & 5 bedrooms) M1505.4.3(1) SEE EQ. 15-1

2018 Residential Ventilation Compliance Summary

Applicant: 40TH MERCER ISLAND Parcel: _____ Permit Number: DWEL21-0295

VENTILATION AND INDOOR AIR QUALITY REQUIREMENTS

Whole House Ventilation fan(s) shall be sized according to International Residential Code M1505.4:

Ventilation rate CFM = (0.01 x total sq.ft.) + [7.5 x (# of bedrooms +1)] but not less than 30 cfm.: 85 cfm (Eq. 15-1)

Ventilation systems shall provide minimum flows per Table M1505.4.3(1) and adjusted per M1505.4.3.1 by coefficients of Tables M1505.4.3(2) and M1505.4.3(3) according to the formula Qf = Qr x Cq x Cf

WHOLE HOUSE VENTILATION SYSTEM __ Exempt: Addition less than 500 sq.ft. or Remodel only.

___ Exhaust fan with 24-hr timer and fresh air inlets in each habitable room per IRC M1505.4.1.2
___ Integrated with forced air system per IRC M1505.4.1.5 ___ Balanced and Distributed
___ Supply fan per IRC M1505.4.1.3 ___ Balanced and NOT Distributed
___ Balanced Supply and Exhaust fans per IRC M1505.4.1.4 ___ NOT balanced and Distributed
___ Engineered design complying with IMC section 403.8.10. X NOT balanced and NOT distributed

Specify location of Whole House Fan: LAUNDRY Size: 128 cfm CONTIN hrs/day

2018 Table M1505.4.3(1) WHOLE-HOUSE SYSTEM MINIMUM VENTILATION RATES, Q_f

Floor Area (sq.ft.)	Number of Bedrooms					
	0	1	2	3	4	>4
0 to 500	30	30	30	35	450	50
501 to 1000	30	30	35	40	50	55
1001 to 1500	30	30	40	45	55	60
1501 to 2000	35	35	45	50	60	65
2001 to 2500	40	40	50	55	65	70
2501 to 3000	45	45	55	60	70	75
3001 to 3500	50	50	60	65	75	80
3501 to 4000	55	55	65	70	80	85
4001 to 4500	60	60	70	75	85	90
4501 to 5000	65	65	75	80	90	95
Greater than 5000	Use equation 15-1 for minimum flow rate					

2018 Table M1505.4.3(2) WHOLE-HOUSE VENTILATION QUALITY ADJUSTMENT (C_q)

SYSTEM TYPE	DISTRIBUTED	NOT DISTRIBUTED	Min. adjusted fan size (cfm)
BALANCED	1.0	1.25	
NOT BALANCED	1.25	1.5	

2018 Table M1505.4.3(3) INTERMITTENT WHOLE-HOUSE VENTILATION RATE FACTORS (C_f)

Run-time % in each 4-hour segment	Rate Multiplier	Min. adjusted Fan Size (cfm)	Specified Fan Size (cfm)
50% (2 hrs every 4 hrs; 12 hrs /day)	2		
66% (2 hrs 40 min every 4 hrs; 16 hrs /day)	1.5		
75% (3 hrs every 4 hrs; 18 hrs /day)	1.3		
100% (continuouslyoperating)	1.0	1.5	128

ROOF VENTILATION

Standard Truss / Scissor Truss Roof Framing Assembly:		LOWER ROOF
Roof Area :	235 s.f.	
Ventilation Required:	235 s.f. x 144 s.i. / s.f. / 300 =	112,8 s.i. Req'd
Provide 1/2 ventilation at eaves, 1/2 above midpoint & min. 3 ft. above eave vents		
Eave Ventilation:		
Birdblocking =	4,71 s.i. / l.f. - 25% reduction =	3,53 s.i. / l.f.
Eave Ventilation Req'd =	112,8 s.i. / 2 / s.i. per l.f. =	15,97 l.f.
Provide :	16 l.f. birdblocking. Ventilation =	56,52 s.i.
Min. Ventilation Provided =	56,52 s.i. is greater than	56,4 s.i. Req'd
Upper Roof Ventilation:		
7"x7" Attic Roof Jack =	49 s.i. each - 25% screen reduction =	36,75 s.i. each.
Upper Ventilation Req'd =	112,8 s.i. / 2 / s.i. of each vent =	1,53 vents
Provide:	2 -7"x7" roof jacks. Ventilation =	73,50 s.i.
Ventilation Provided =	73,50 s.i. is greater than	56,4 s.i. Req'd
Use : (minimum)	**16 l.f. birdblocking. Ventilation =**	**56,52 s.i.**
Use : (minimum)	**2 -7"x7" roof jacks. Ventilation =**	**73,50 s.i.**
Total Min. Ventilation Provided =	**130,02 s.i. IS GREATER THAN :**	**112,8 s.i. Req'd**

ROOF VENTILATION

Standard Truss / Scissor Truss Roof Framing Assembly:		MAIN ROOF
Roof Area :	2350 s.f.	
Ventilation Required:	2350 s.f. x 144 s.i. / s.f. / 300 =	1128 s.i. Req'd
Provide 1/2 ventilation at eaves, 1/2 above midpoint & min. 3 ft. above eave vents		
Eave Ventilation:		
Birdblocking =	4,71 s.i. / l.f. - 25% reduction =	3,53 s.i. / l.f.
Eave Ventilation Req'd =	1128 s.i. / 2 / s.i. per l.f. =	159,66 l.f.
Provide :	160 l.f. birdblocking. Ventilation =	565,20 s.i.
Min. Ventilation Provided =	565,2 s.i. is greater than	564 s.i. Req'd
Upper Roof Ventilation:		
7"x7" Attic Roof Jack =	49 s.i. each - 25% screen reduction =	36,75 s.i. each.
Upper Ventilation Req'd =	1128 s.i. / 2 / s.i. of each vent =	15,35 vents
Provide:	16 -7"x7" roof jacks. Ventilation =	588,00 s.i.
Ventilation Provided =	588,00 s.i. is greater than	564 s.i. Req'd
Use : (minimum)	**160 l.f. birdblocking. Ventilation =**	**565,20 s.i.**
Use : (minimum)	**16 -7"x7" roof jacks. Ventilation =**	**588,00 s.i.**
Total Min. Ventilation Provided =	**1153,20 s.i. IS GREATER THAN :**	**1128 s.i. Req'd**

Project Information: Mercer Island RESIDENCE

Contact Information

Heating System Type: ○ All Other Systems ◉ Heat Pump

To see detailed instructions for each section, place your cursor on the word "Instructions"

Design Temperature (Instructions): Mercer Island — Design Temperature Difference (ΔT) = 70 (ΔT = Indoor (70 degrees) - Outdoor Design Temp)

Area of Building

Conditioned Floor Area (Instructions): Conditioned Floor Area (sq ft) = 4 016

Average Ceiling Height (Instructions): Average Ceiling Height (ft) = 9,5 — Conditioned Volume 38 152

Glazing and Doors (Instructions): U-0,28

U-Factor	X	Area	=	UA
0,280		697		195,16

Skylights (Instructions)

U-Factor	X	Area	=	UA
0,50		0		---

Insulation

Attic (Instructions): R-49

U-Factor	X	Area	=	UA
0,026		2 350		61,10

Single Rafter or Joist Vaulted Ceilings (Instructions): R-49 Advanced

U-Factor	X	Area	UA
0,020		0	

Above Grade Walls *(see Figure 1)* (Instructions): R-21 Intermediate

U-Factor	X	Area	UA
0,056		3 471	194,38

Floors (Instructions): R-38

U-Factor	X	Area	UA
0,025		2 373	59,33

Below Grade Walls *(see Figure 1)* (Instructions): R-21 Interior

U-Factor	X	Area	UA
0,042		0	

Slab Below Grade *(see Figure 1)* (Instructions): No Slab Below Grade in this project.

F-Factor	X	Length	UA
0,303		0	---

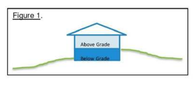
Slab on Grade *(see Figure 1)* (Instructions): R-10 Fully Insulated

F-Factor	X	Length	UA
0,360		0	

Location of Ducts (Instructions): Conditioned Space

Duct Leakage Coefficient 1,00

Figure 1.



Sum of UA	509,96
Envelope Heat Load *Sum of UA x ΔT*	0 Btu / Hour
Air Leakage Heat Load *Volume x 0.6 x ΔT x 0.018*	0 Btu / Hour
Building Design Heat Load *Air leakage + envelope heat loss*	0 Btu / Hour
Building and Duct Heat Load *Ducts in unconditioned space: sum of building heat loss x 1.10 Ducts in conditioned space: sum of building heat loss x 1*	0 Btu / Hour
Maximum Heat Equipment Output *Building and duct heat loss x 1.40 for forced air furnace Building and duct heat loss x 1.25 for heat pump*	0 Btu / Hour

ENERGY NOTES:

1. A RESIDENTIAL ENERGY COMPLIANCE CERTIFICATE COMPLYING WITH SEC R401.3 IS REQUIRED TO BE COMPLETED BY THE DESIGN PROFESSIONAL OR BUILDING AND PERMANENTLY POSTED WITHIN 3' OF THE ELECTRICAL PANEL PRIOR TO FINAL INSPECTION.

2. DUCT LEAKAGE TEST RESULTS SHALL BE PROVIDED TO THE BUILDING INSPECTOR AND HOMEOWNER PRIOR TO AN APPROVED FINAL INSPECTION PER SEC R403.2.2.

3. EACH DWELLING UNIT IS REQUIRED TO BE PROVIDED WITH AT LEAST ONE PROGRAMMABLE THERMOSTAT FOR THE REGULATION OF TEMPERATURE PER SEC R403.1. 4. BUILDING AIR LEAKAGE TESTING, DEMONSTRATING THAT LEAKAGE RATE NOT EXCEED 5 AIR CHANGES PER HOUR AND CONFORM TO SEC R402.4.1 THROUGH R402.4.4.

5. MINIMUM 90% OF ALL INTERIOR LIUMINAIRES SHALL BE HIGH EFFICACY LUMINAIRES. ALL EXTERIOR LIGHTING SHALL BE HIGH EFFICACY LUMINAIRES PER SEC R404.1.

6. BUILDING ENVELOPE MEETS REQUIREMENTS OF TABLE R402.1.1, CLIMATE ZONE 4 OF 2018 SEC.

TABLE R302.6
DWELLING-GARAGE SEPARATION

SEPARATION	MATERIAL
From the residence and attics	Not less than 1/2-inch gypsum board or equivalent applied to the garage side
From habitable rooms above the garage	Not less than 5/8-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than 1/2-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

R314.2.3
A HEAT DETECTOR OR HEAT ALARM RATED FOR THE AMBIENT OUTDOOR TEMPERATURES AND HUMIDITY SHALL BE INSTALLED IN NEW GARAGES THAT ARE ATTACHED TO OR LOCATED UNDER NEW AND EXISTING DWELLINGS. HEAT DETECTORS AND HEAT ALARMS SHALL BE INSTALLED IN A CENTRAL LOCATION AND IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. EXCEPTION: HEAT DETECTORS AND HEAT ALARMS SHALL NOT BE REQUIRED IN DWELLINGS WITHOUT COMMERCIAL POWER.

REQUIRED SAFETY GLAZING LOCATIONS:

1. GLAZING IN SWINGING DOORS EXCEPT LOUVERED WINDOWS AND JALOUSIES COMPLYING WITH IRC R308.2.
2. GLAZING IN FIXED AND SLIDING PANELS OF SLIDING DOOR ASSEMBLIES AND PANELS IN SLIDING AND BIFOLD CLOSET DOOR ASSEMBLIES.
3. GLAZING IN STORM DOORS.
4. GLAZING IN ALL UNFRAMED SWINGING DOORS
5. GLAZING IN DOORS, WALLS, FENCES AND ENCLOSURES FOR HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHROOMS, AND SHOWERS. GLAZING IN ANY PORTION OF A BUILDING WALL ENCLOSING THESE COMPARTMENTS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE ANY STANDING OR WALKING SURFACE. EXCEPTION: OPENINGS THROUGH WHICH A 3" SHPERE IS UNABLE TO PASS.
6. GLAZING IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE WALKING SURFACE. EXCEPTION: WHERE THERE IS AN INTERVENING WALL OR PARTITION BETWEEN DOOR AND GLAZING OR WHERE THE DOOR ACCESSES A GLOSET 3' OR LESS IN DEPTH.
7. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL, WHEN ALL OF THE FOLLOWING APPLY:
   7.1 EXPOSED AREA OF AN INDIVIDUAL PANE GREATER THAN 9 S.F.
   7.2 BOTTOM EDGE LESS THAN 18" ABOVE THE FLOOR.
   7.3 TOP EDGE GREATER THAN 36" ABOVE THE FLOOR.
   7.4 ONE OR MORE WALKING SURFACES WITHIN 36" HORIZONTALLY OF THE GLAZING. EXCEPTION: WHERE A PROTECTIVE 1-1/2"-WIDE BAR IS INSTALLED ON THE ACCESSIBLE SIDE OF THE GLAZING 34" - 38" ABOVE THE FLOOR AND IS CAPABLE OF WITHSTANDING A LOAD OF 50 LBS PER LINEAL FOOT OR WHERE THE BOTTOM EDGE OF THE GLASS IS 25" OR MORE ABOVE GRADE, A ROOF, WALKING SURFACE, OR OTHER HORIZONTAL SURFACE.
8. GLAZING IN RAILINGS REGARDLESS OF AREA OR HEIGHT ABOVE A WALKING SURFACE. INCLUDES STRUCTURAL BALUSTER PANELS AND NONSTRUCTURAL IN-FILL PANELS.
9. GLAZING IN WALLS AND FENCES ENCLOSING INDOOR AND OUTDOOR SWIMMING POOLS, HOT TUBS, AND SPAS WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60" ABOVE A WALKING SURFACE AND WITHIN 60" HORIZONTALLY OF THE WATER'S EDGE. THIS WILL APLY TO ALL SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING.
10. R308.4.6 GLAZING ADJACENT TO STAIRS AND RAMPS.
    GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 36 INCHES (914 MM) ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS AND RAMPS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

    EXCEPTIONS:

    1. WHERE A RAIL IS INSTALLED ON THE ACCESSIBLE SIDE(S) OF THE GLAZING 34 TO 38 INCHES (864 TO 965 MM) ABOVE THE WALKING SURFACE. THE RAIL SHALL BE CAPABLE OF WITHSTANDING A HORIZONTAL LOAD OF 50 POUNDS PER LINEAR FOOT (730 N/M) WITHOUT CONTACTING THE GLASS AND HAVE A CROSS-SECTIONAL HEIGHT OF NOT LESS THAN 11/2 INCHES (38 MM).

    2. GLAZING 36 INCHES (914 MM) OR MORE MEASURED HORIZONTALLY FROM THE WALKING SURFACE.
11. R308.4.7 GLAZING ADJACENT TO THE BOTTOM STAIR LANDING.
    GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF A STAIRWAY WHERE THE GLAZING IS LESS THAN 36 INCHES (914 MM) ABOVE THE LANDING AND WITHIN A 60-INCH (1524 MM) HORIZONTAL ARC LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

    EXCEPTION: THE GLAZING IS PROTECTED BY A GUARD COMPLYING WITH SECTION R312 AND THE PLANE OF THE GLASS IS MORE THAN 18 INCHES (457 MM) FROM THE GUARD.

R302.6 DWELLING-GARAGE FIRE SEPARATION
THE GARAGE SHALL BE SEPARATED AS REQUIRED BY TABLE R302.6. OPENINGS IN GARAGE WALLS SHALL COMPLY WITH SECTION R302.5. ATTACHMENT OF GYPSUM BOARD SHALL COMPLY WITH TABLE R702.3.5. THE WALL SEPARATION PROVISIONS OF TABLE R302.6 SHALL NOT APPLY TO GARAGE WALLS THAT ARE PERPENDICULAR TO THE ADJACENT DWELLING UNIT WALL.

NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS OF PROJECT AND REPORT ANY OMISSIONS / DISCREPANCIES TO DESIGNER PRIOR TO COMMENCING WORK. DESIGNER SHALL NOT BE RESPONSIBLE FOR DISCREPANT CONDITIONS RESULTING FROM UNAUTHORIZED WORK PERFORMED BY THE CONTRACTOR.

NOTE:
REFER TO STRUCTURAL SHEETS FOR SHEAR WALL SCHEDULE AND ENGINEERING PLAN WHICH CONTAIN REFERENCES AND/OR INSTRUCTIONS PERTAINING TO EACH SHEAR WALL INDICATED IN THIS PLAN.

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8456 SE 40TH
MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

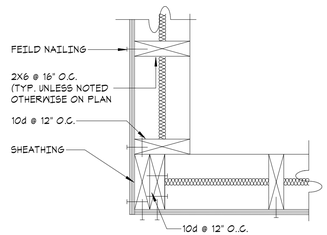
SUBMITTAL/REVISION: DATE:
SUBMITTED -/-/2022
REVISED -/-/2022

DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

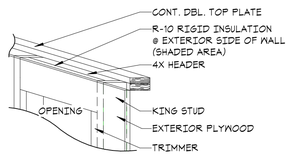
SHEET TITLE:
SCHEDULES AND NOTES

PROJECT NUMBER:
21257

SHEET NUMBER:
A10

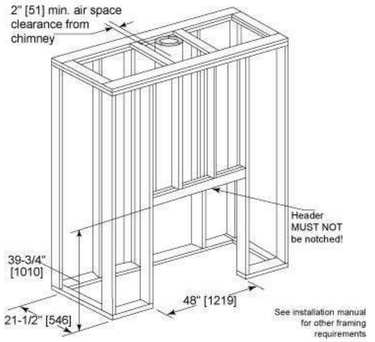


1 CORNER FRAMING

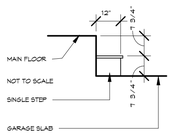


NOT TO SCALE

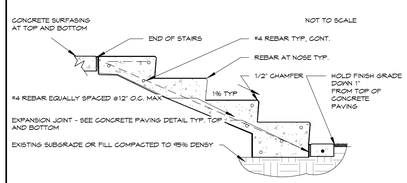
2 HEADER/ INSULATION



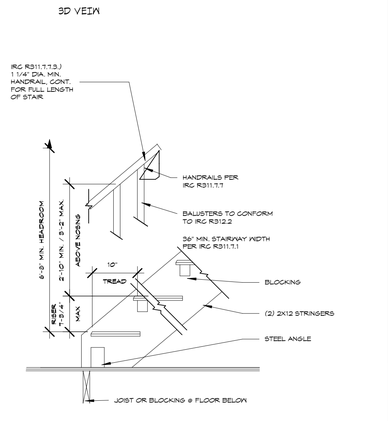
3 FIREPLACE FRAMING



4 GARAGE STEP



5 EXTERIOR STAIR



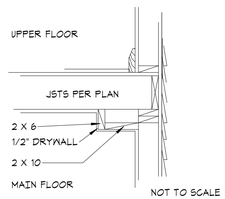
NOT TO SCALE

NOTE: GREATEST AND LEAST TREAD & RISER SHALL NOT VARY MORE THAN 3/8"(PER IRC R311.7.4.1 & R311.7.4.2)

GUARDRAIL MEMBERS TO BE SUCH THAT A SPHERE OF 4" DIA. SHALL NOT PASS THROUGH ANY OPENING

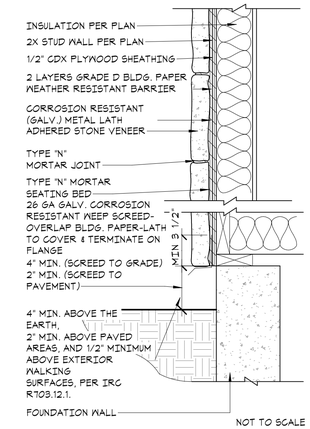
OPEN RISERS ARE PERMITTED AS LONG AS OPENINGS LOCATED MORE THAN 30-INCHES ABOVE THE FLOOR MUST NOT PERMIT THE PASSAGE OF A 4-INCH-DIAMETER SPHERE (R311.7.5.1).

6 INTERIOR OPEN RISERS STAIR



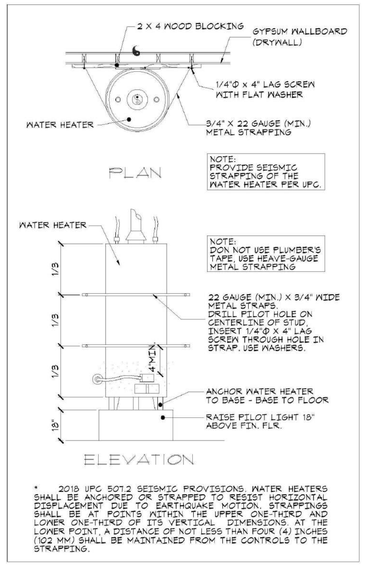
NOT TO SCALE

7 COFFERED CEILING



NOT TO SCALE

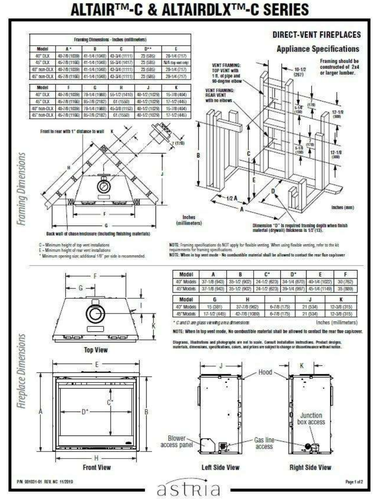
8 ADHERED VENEER O/ SHEATHING



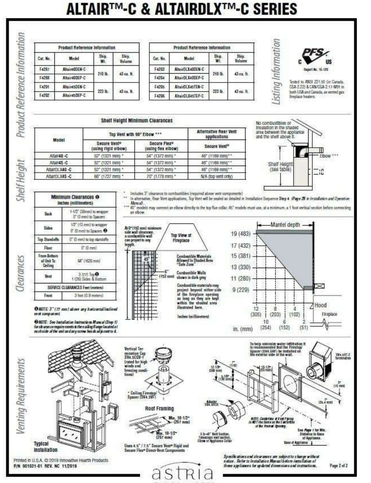
* 2018 UPC 507.2 SEISMIC PROVISIONS. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION. STRAPPINGS SHALL BE AT POINTS WITHIN THE UPPER ONE-THIRD AND LOWER ONE-THIRD OF ITS VERTICAL DIMENSIONS. AT THE LOWER POINT, A DISTANCE OF NOT LESS THAN FOUR (4) INCHES (102 MM) SHALL BE MAINTAINED FROM THE CONTROLS TO THE STRAPPING.

9 WATER HEATER ANCHORAGE

ALTAIR™-C & ALTAIRDLX™-C SERIES



ALTAIR™-C & ALTAIRDLX™-C SERIES



FIREPLACE SPECS

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PARCEL #: 502190-0790

PREPARED FOR:
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KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022

DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:

DETAILS

PROJECT NUMBER:
21257

SHEET NUMBER:
A11

Basic Stairs

This tip sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

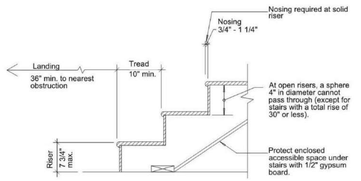


Figure 1: Typical Stair Treads and Risers

Stair Treads and Risers

- ☐ The largest tread or riser within any flight of stairs is not to exceed the smallest by more than 3/8 inches. (R311.7.5)

Illumination

- ☐ Interior stairways shall be provided with an artificial light source to illuminate landings and treads. There shall be a wall switch at each floor level to control the light source where the stairway has 6 or more risers. (R303.7)
- ☐ Exterior stairways shall be provided with an artificial light source located at the top landing of the stairway and located at the bottom landing where accessing a basement. (R303.8)

Handrails

- ☐ Handrails are required on at least one side for stairways with four or more risers. See Tip Sheet 2 for additional information regarding handrails. (R311.7.8)

Landings

- ☐ Landings are required at the top and the bottom of stairways. A floor landing is not required at the top of an interior flight of stairs, provided a door does not swing over the stairs. (R311.7.6)
- ☐ A landing extending the width of the stair and measuring a minimum of 36 inches in the direction of travel is required at the top and bottom of every stairway. (R311.7.6)

Circular, Winding, or Spiral Stairways

- ☐ For exceptions related to the construction of circular, winding, or spiral stairways, see IRC R311.7.5.2.1 and R311.7.10.

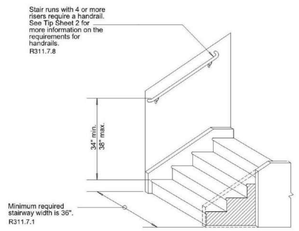


Figure 2: Typical Stair Elevation

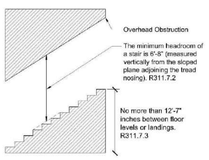


Figure 3: Headroom Clearance Requirements

1 BASIC STAIRS DETAIL

Residential Guards (Guardrails)

This tip sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

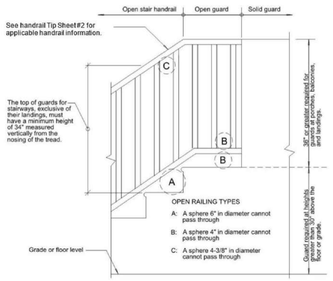


Figure 1: Guard Elevation (IRC R312)

Requirements

- ☐ Guards shall comply with IRC R312.1; refer to Figure 1 for major requirements.
- ☐ Guards shall be structurally designed to comply with IRC Table R301.5 (i.e., designed for a 200-pound load in any direction along the top and a 50-pound point load elsewhere).
- ☐ For glass guards or guards with glazing, see IRC R308.4.4.

2 GUARDRAILS DETAIL

Smoke, Heat, and Carbon Monoxide Alarms

This tip sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments and the 2016 edition of NFPA 72.

Definitions

- ☐ **Smoke alarm:** A device designed to respond when it senses smoke, typically as an indicator of fire.
- ☐ **Heat alarm:** A device designed to respond when it senses a rise in temperature, typically as an indicator of fire.
- ☐ **Carbon monoxide alarm:** A device designed to respond when it senses carbon monoxide, a poisonous gas.
- ☐ **All alarms** shall be UL listed and installed per manufacturer instructions. (R314.1.1, R315.1.1)

New Construction

- ☐ Smoke alarms and carbon monoxide alarms shall be installed throughout each dwelling unit in all **required locations**. (R314.2.1, R315.2.1)
- ☐ A heat detector shall be provided in each new attached garage. (R314.2.3)
- ☐ Smoke alarms, heat alarms, and carbon monoxide alarms shall receive their **primary power** from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. (R314.6, R315.6)
- ☐ Where more than one smoke alarm is required to be installed within an individual dwelling unit, the alarm devices shall be **interconnected** in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. (R314.4, R315.5)
- ☐ Heat alarms shall be **connected** to a heat alarm or smoke alarm that is installed in the dwelling unit. Alarms that are installed for this purpose shall be located in a hallway, room, or other location that will provide occupant notification. (R314.4.1)
- ☐ Physical interconnection of smoke alarms shall not be required where **listed wireless alarms** are installed and all alarms sound upon activation of one alarm. (R314.4, R315.5)

Alterations, Repairs, and Additions

- ☐ In a dwelling unit where alterations, repairs or additions occur, smoke alarms and carbon monoxide alarms shall be installed throughout each dwelling unit, in all **required locations**, where not already present. (R314.2.2, R315.2.2)
- ☐ Smoke and carbon monoxide alarms can be powered by the building wiring or batteries. (R314.6, R315.6)
- ☐ Smoke alarms shall be **interconnected** within an individual dwelling except where such existing smoke alarms are not interconnected or where such new smoke alarm or alarm is not capable of being interconnected to the existing smoke alarms. (R314.4)
- ☐ Carbon monoxide alarms shall be **interconnected** except where the permit related work does not provide access to the building wiring (such as removing interior walls or ceiling finishes) and there is no attic, crawlspace, or basement available. (R315.5)

Required Locations

- ☐ A **smoke alarm** shall be located in each sleeping room or sleeping loft. (R314.3)
- ☐ A **smoke alarm** shall be located in each napping area of a family home childcare. (R314.3)
- ☐ A **smoke alarm** and a **carbon monoxide alarm** (or combination smoke and carbon monoxide alarm) shall be located outside each sleeping area in the immediate vicinity of the bedroom(s). (R314.3, R315.3)
- ☐ At least one **smoke alarm** and one **carbon monoxide alarm** shall be located on each floor level, including **basements** and habitable attics. (R314.3, R315.3)
- ☐ In split level floor plans, at the upper level, provided there is no intervening door between adjacent levels and the lower level is less than a full story below the upper level. (R314.3)
- ☐ A **carbon monoxide alarm** is required in a bedroom when a fuel-burning appliance is installed in the **bedroom** or its attached bathroom. (R315.3)
- ☐ A combination alarm (**combined smoke and carbon monoxide alarm**) is acceptable in any required location. (R314.5, R315.4)
- ☐ A **heat alarm** is required in each new attached garage. (R314.2.3)

Alarms and Detectors on Walls and Sloped/Peaked/Coffered Ceilings per NFPA 72

- ☐ **Wall mounted** alarms must be not more than 12 inches from the adjoining ceiling surface. (NFPA 72 29.8.3.3)
- ☐ Alarms in **peaked or sloped ceilings** must be within 3 feet horizontally and no closer than 4 inches vertically to the peak. Avoid placing alarms in **dead air spaces**; refer to Figure 1. (NFPA 72 29.8.3.1, 29.8.3.2, 29.8.3.4 (9), (10))
- ☐ For **coffered ceilings**, alarms shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 inches vertically down from the highest point. (NFPA 72 29.8.3.4 (11))

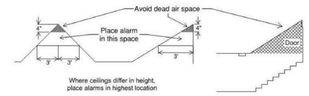


Figure 1: Smoke Alarms and Smoke Detectors in Sloped/Peaked Ceilings

Specific Location Requirements per NFPA 72

- ☐ Do not place alarms in spaces where **temperatures** may be above or below the alarm's operating temperature range. (NFPA 72 29.8.3.4 (1), (2), (3))
- ☐ Avoid placing alarms within 3 feet horizontally from doors or openings to **bathrooms** containing a bathtub or shower. (NFPA 72 29.8.3.4 (6))
- ☐ Do not place alarms within 3 feet from a **supply register** of a forced air heating or cooling system and it shall be installed outside of the direct airflow from those registers. (NFPA 72 29.8.3.4 (7))
- ☐ Do not place alarms within 3 feet of the blades of a **ceiling fan**. (NFPA 72 29.8.3.4 (8))

Alarms and Detectors Near Cooking Appliances per NFPA 72

Refer to Figure 2:

A. **Photoelectric** smoke alarms shall not be installed less than 6 feet horizontally from a permanently installed cooking appliance. (NFPA 72 29.8.3.4 (4))

B. **Ionization** smoke alarms with an alarm-silencing switch must not be less than 10 feet from a permanent cooking appliance. (NFPA 72 29.8.3.4 (4))

C. **Ionization** smoke alarms without an alarm-silencing switch must not be less than 20 feet from a permanent cooking appliance. (NFPA 72 29.8.3.4 (4))

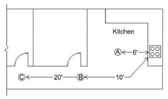


Figure 2: Smoke Alarms and Smoke Detectors Near Cooking Appliances

Carbon Monoxide Alarm Location Limitations

- ☐ Do not place alarms directly above or beside fuel-burning appliances.
- ☐ Do not place alarms in direct sunlight.
- ☐ Do not place alarms in low areas where children can reach. Do not place alarms behind curtains or any structure that might prevent carbon monoxide from reaching the sensor.

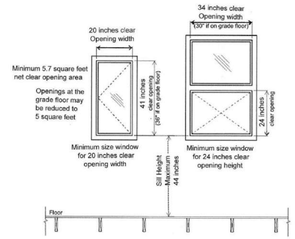
3 ALARMS DETAIL

Residential Emergency Egress Openings

This Tip Sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

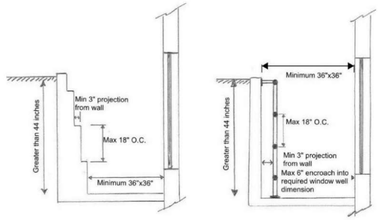
Emergency Escape and Rescue Opening

- ☐ Basements, habitable attics and every sleeping room shall have not less than one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room. Emergency escape and rescue openings shall be operational from the inside without the use of keys, tools, or special knowledge, and open directly into a public way, or to a yard or court that opens to a public way. (R310.1)
- ☐ Where bars, grilles, covers, screens, or opening control devices are placed on emergency escape and rescue openings, area or window wells, the minimum net clear opening sizes shall comply and such devices shall be releasable or removable from the inside without the use of key, tool, special knowledge, or force greater than that required for normal operation of the escape and rescue opening. (R310.4)



Window Wells in Conjunction with Emergency Escape and Rescue Openings

- ☐ The horizontal area of the window well shall be not less than 9 square feet, with a horizontal projection and width not less than 36 inches. The area of the window well shall allow the emergency escape and rescue opening to be fully opened. (R310.3.2)
- ☐ Window wells with a vertical depth greater than 44 inches shall be equipped with a permanently affixed ladder or steps useable with the emergency escape and rescue opening in the fully opened position and shall not encroach into the required dimensions of the window well. (R310.3.2.2)
- ☐ Ladder rungs or steps shall have an inside width of not less than 12 inches, shall project not less than 3 inches from the wall, and be spaced not more than 18 inches on center vertically for the full height of the window well. (R310.3.2.2)



4 EMERGENCY EGRESS DETAIL

Safety Glazing

This Tip Sheet reflects code requirements of the 2018 International Residential Code (IRC) with Washington State Amendments.

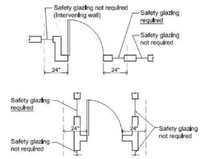
What is Safety Glazing?

Safety glazing is glass that is less dangerous when it breaks, such as tempered or laminated glass.

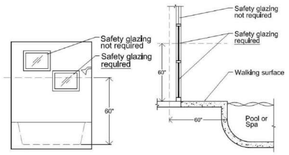
Per R308.1, where safety glazing is required, each pane must be provided with a manufacturer's label defining the type of glass and safety glazing standard to which it complies. For tempered glazing the label must be permanently etched, fired, or embossed, on the glass or be a type that once applied cannot be removed without being destroyed. For other types of safety glazing, a certificate, affidavit or other evidence confirming compliance with the code shall be provided at time of inspection.

Required Safety Glazing in Hazardous Locations

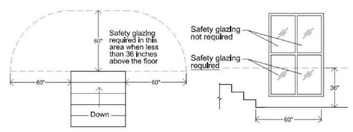
1. **Glazing in Doors:** Safety glazing is required in fixed and operable panels of swinging, sliding, and bifold doors. Safety glazing is not required in a door if the glazed openings do not allow the passage of a 3-inch sphere, or if the glazing in the door is decorative. (R308.4.1)
2. **Glazing Adjacent to Doors:** Glazing adjacent to doors is required in the following locations if the bottom edge of the glazing is less than 60 inches above the walking surface: Within 24 inches of either side of the door in the plane of the door in a closed position, or if glazing is in a wall less than 180 degrees from the plane of the door in a closed position and within 24 inches of the hinge side of an in-swinging door. Safety glazing is not required if there is an intervening wall or permanent barrier between the door and the glazing. (R308.4.2)



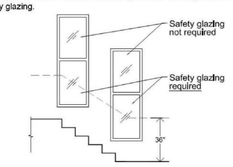
3. **Glazing in Windows:** Safety glazing in windows is required if the individual panel meets all of the following requirements (R308.4.3):
   a. Exposed area of the individual panel is greater than 9 square feet.
   b. The bottom edge of the glazing is less than 18 inches from the floor.
   c. The top edge of the glazing is more than 36 inches above the floor.
   d. There is a walking surface within 36 inches, measured horizontally, from the glazing.
   Exceptions:
   i. Decorative glazing.
   ii. Where a horizontal rail capable of resisting 50 pounds per linear foot of force without making contact with the glass is installed on the accessible side of the glazing 34 to 38 inches above the walking surface.
4. **Glazing in Railings and Guards:** All glazing in railings and guards, including structural baluster panels and nonstructural in-fill panels, is required to be safety glazing. (R308.4.4)
5. **Glazing and Wet Surfaces:** Glazing in walls, enclosures, or fences around showers, bathtubs, pools, hot tubs, spas, saunas, and steam rooms where the bottom edge of the glazing is less than 60 inches from the standing or walking surface is required to be safety glazing. Safety glazing is not required where the glazing is more than 60 inches, horizontally, from the edge of the water. (R308.4.5)



6. **Glazing Adjacent to Bottom Stair Landings:** Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches above the landing and within a 60-inch horizontal arc from the bottom tread must be safety glazing. (R308.4.7)



7. **Glazing Adjacent to Stairs and Ramps:** Glazing where the bottom edge is less than 36 inches above the plane of the adjacent walking surface of stairways, ramps, and landings between stair flights and ramp runs, must be safety glazing. (R308.4.6)
   Exceptions:
   1. Where a horizontal rail capable of resisting 50 pounds per linear foot of force without making contact with the glass is installed on the accessible side of the glazing 34 to 38 inches above the walking surface.
   2. Glazing more than 36 inches horizontally from the walking surface is not required to be safety glazing.



5 SAFETY GLAZING DETAIL

Window Fall Protection

This Tip Sheet reflects code requirements of the 2018 International Residential Code (IRC) and the 2018 International Building Code (IBC) with Washington State Amendments.

Requirements

- ☐ Where the sill height above finished grade on the exterior side of an operable window opening is greater than 72 inches, and the sill height above the finished floor on the interior side of the operable window opening is less than 24 inches (or 36 inches in dwelling units regulated by the IBC) (see Figure 1), then window fall protection shall be provided by one of the following (R312.2.1, R312.2.2; IBC 1015.8):
  1. Operable windows with openings that, when in their largest opened position, will not allow the passage of a 4-inch sphere (see Figure 2).
  2. Operable windows that are provided with window fall prevention devices that comply with ASTM F 2090 (see Figure 2).
  3. Operable windows that are provided with opening control devices that comply with ASTM F 2090 (see Figure 2). (Note: When installed on required emergency egress windows, these devices must not reduce the net clear opening to less than the minimum required size or dimensions; see Tip Sheet 10 for more information.)
  4. In dwelling units regulated by the IBC where the sill height of an operable window above exterior finished grade is more than 75 feet, provide window fall prevention devices complying with ASTM F 2006 (see Figure 2).

Standards

- ☐ ASTM F 2006: Standard Safety Specification for Window Fall Prevention Devices for Non-Emergency Escape (Egress) and Rescue (Ingress) Windows
- ☐ ASTM F 2090: Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.

Egress Windows

- ☐ Egress windows must meet minimum size requirements. Minimum clear opening size of 5.7 square feet (5 square feet on the grade level) with minimum clear height of 24 inches and minimum clear width of 20 inches.
- ☐ For additional emergency egress window requirements refer to Tip Sheet 10.

Safety Glazing

- ☐ For additional safety glazing requirements refer to Tip Sheet 19.

Figure 1: Sill height above finished grade on the exterior side of an operable window opening

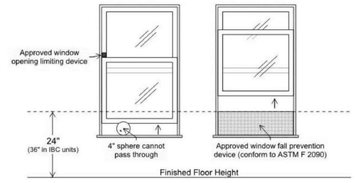


Figure 2: Window fall protection

Table 1: Summary of Requirements

Exterior Sill Height Above Finished Grade	Interior Sill Height Above Finished Floor	Can be used for Egress	Safety Glazing Required	Fall Protection Required
72 inches or less	Greater than 44 inches	No	-	No
	Between 18 and 44 inches	Yes	-	No
	Sill below 18 inches, top of window above 36 inches, and individual pane of glass is greater than 9 square feet	Yes	Yes	No
Greater than 72 inches	Greater than 44 inches	No	-	No
	Between 24 and 44 inches (IRC dwelling units)	Yes	-	No
	Less than 24 inches (IRC dwelling units)	Yes	-	Yes
	Between 36 and 44 inches (IBC dwelling units)	Yes	-	No
	Less than 36 inches (IBC dwelling units)	Yes	-	Yes
	Sill below 18 inches, top of window above 36 inches, and individual pane of glass is greater than 9 square feet	Yes	Yes	Yes
Greater than 75 feet	Less than 36 inches (IBC dwelling units)	No	-	Yes

6 WINDOW FALL PROTECTION

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MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022

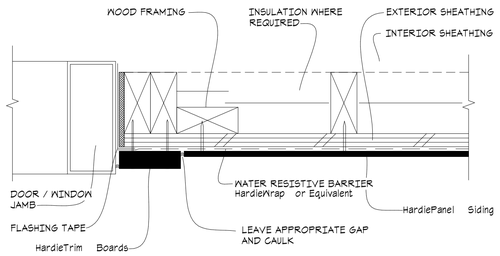
DESIGN BY: PAVEL MELNIK
DRAFTED BY: ANNA KONYAKINA

SHEET TITLE:

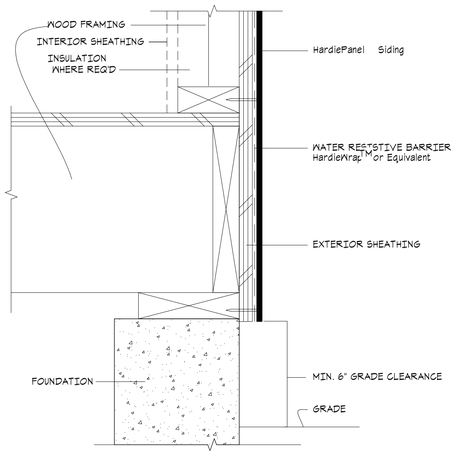
PROJECT DETAILS

PROJECT NUMBER:
21257

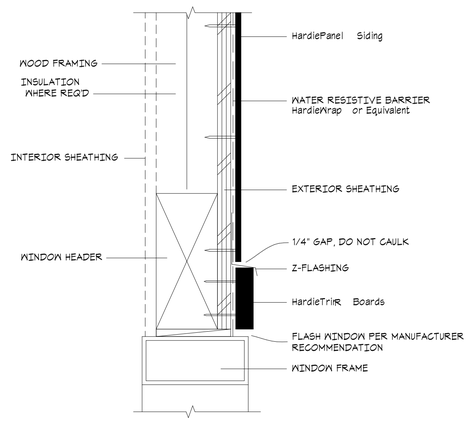
SHEET NUMBER:
A12



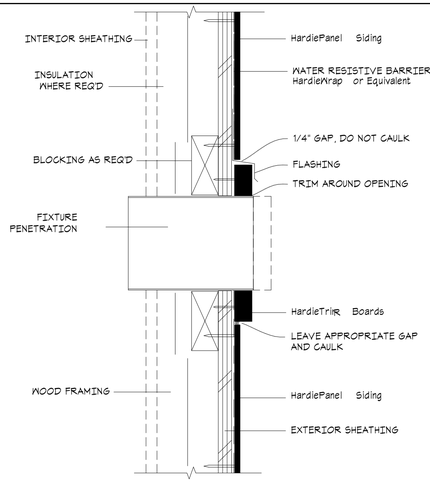
1 DOOR / WINDOW JAMB



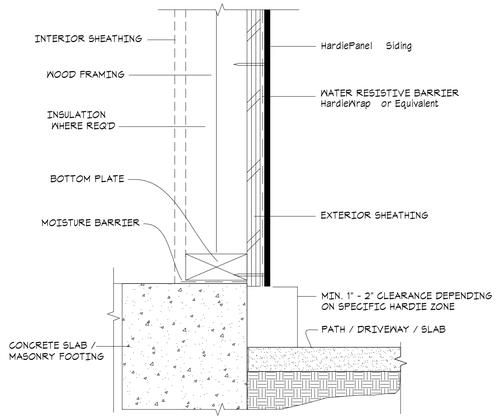
2 GRADE CLEARANCE



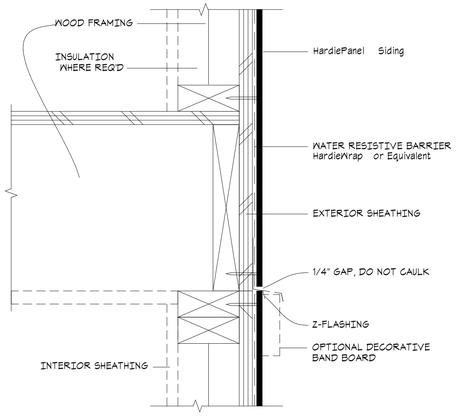
3 WINDOW/DOOR HEAD



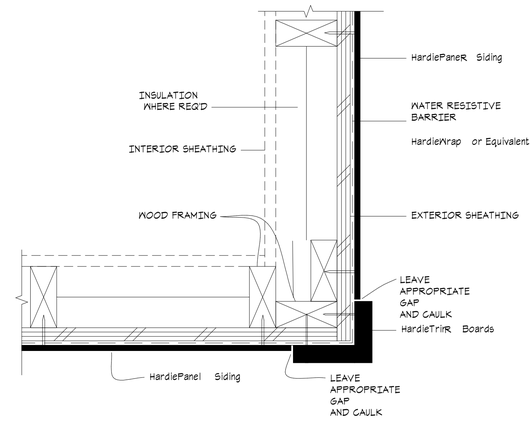
4 FIXTURE PENETRATION



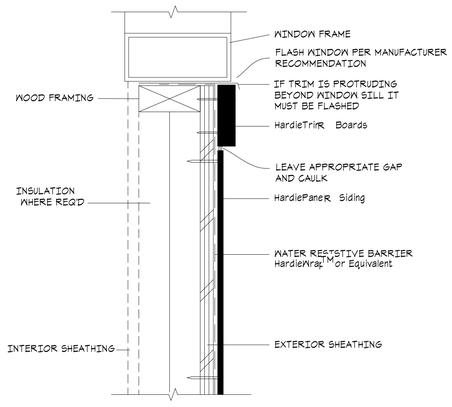
5 HARDSCAPE CLEARANCES, DECKS, PORCHES, PATIOS, WALKWAYS, ROOFS, ETC.



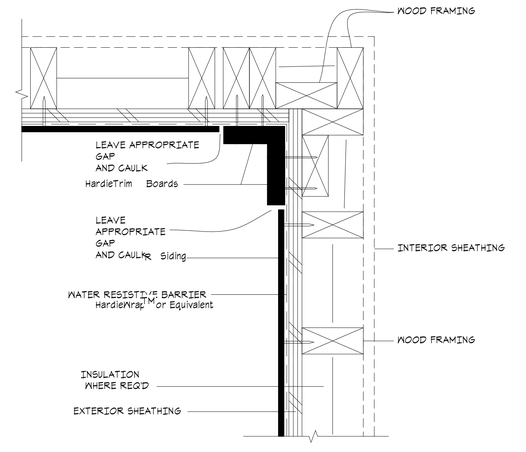
6 HORIZONTAL VIEW



7 OUTSIDE CORNER



8 WINDOW SILL



9 INSIDE CORNER

HARDIE PANEL SIDING DETAILS

SCALE: NOT TO SCALE (N.T.S.)

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MERCER ISLAND, WA 98040
PARCEL #: 502190-0790

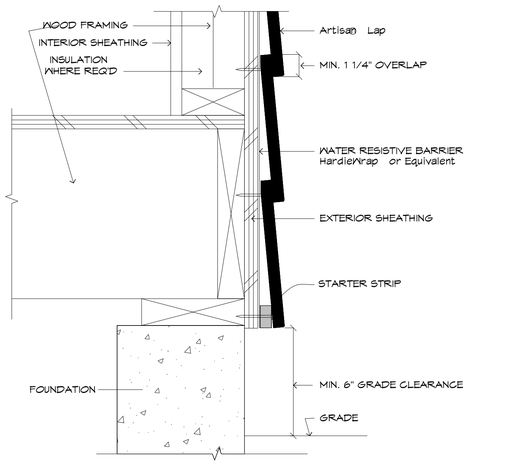
PREPARED FOR:
PHILIP SUDO Q LLC
KUN QIAN &
LAURIE QIAN

SUBMITTAL/REVISION:	DATE:
SUBMITTED	-/-/2022
REVISED	-/-/2022
DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:
HARDIE PANEL SIDING DETAILS

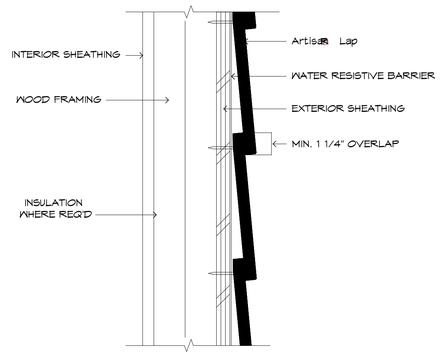
PROJECT NUMBER:
21257

SHEET NUMBER:
A13



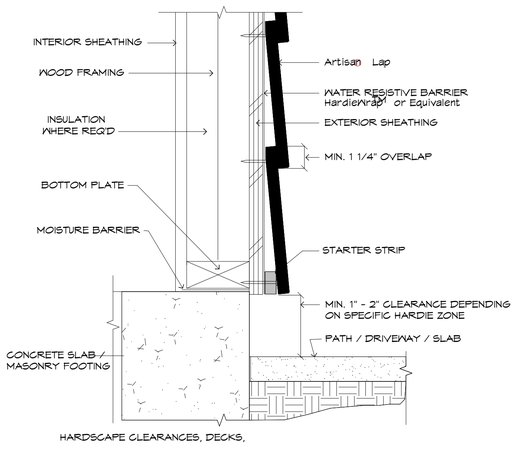
1 GRADE CLEARANCE

SCALE: NTS



2 HORIZONTAL LAP VIEW

SCALE: NTS

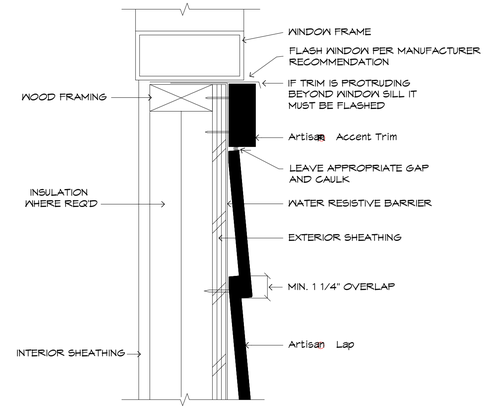


3 PORCHES, PATIOS, WALKWAYS, ROOFS, ETC.

SCALE: N.T.S.

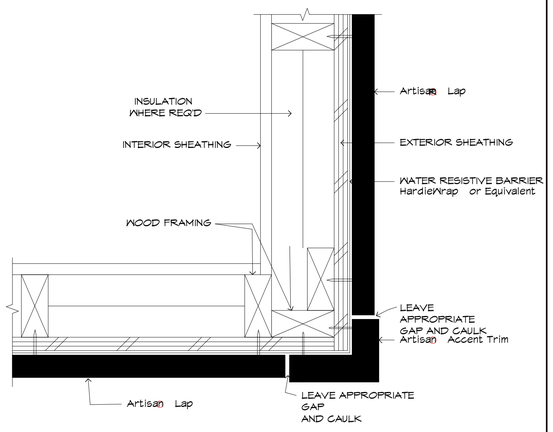
LAP SIDING DETAILS

SCALE: NOT TO SCALE (N.T.S.)



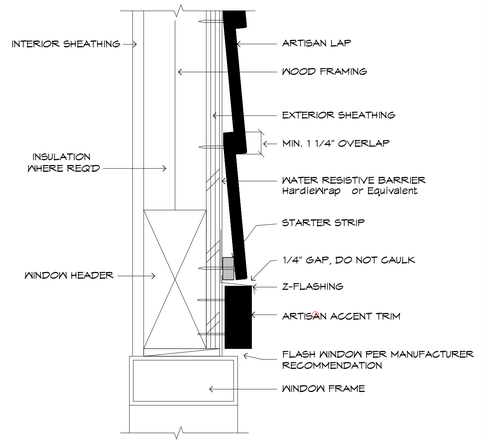
4 WINDOW SILL

SCALE: N.T.S.



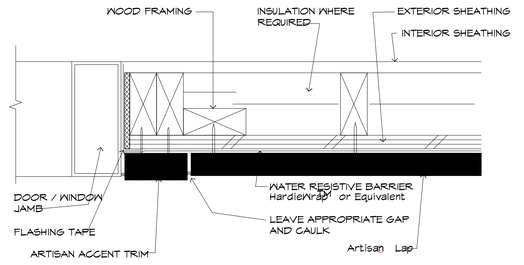
5 OUTSIDE CORNER

SCALE: N.T.S.



6 WINDOW/DOOR HEAD

SCALE: N.T.S.



7 DOOR / WINDOW JAMB

SCALE: N.T.S.

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DESIGN BY:	PAVEL MELNIK
DRAFTED BY:	ANNA KONYAKINA

SHEET TITLE:

ARTISAN LAP SIDING DETAILS

PROJECT NUMBER:
21257

SHEET NUMBER:
A14

GENERAL NOTES

THE STRUCTURE HAS BEEN DESIGNED TO RESIST CODE PRESCRIBED VERTICAL AND LATERAL FORCES AFTER THE CONSTRUCTION OF ALL STRUCTURAL ELEMENTS HAS BEEN COMPLETED. STABILITY OF THE STRUCTURE IS THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THIS RESPONSIBILITY INCLUDES BUT IS NOT LIMITED TO JOBSITE SAFETY: ERECTION MEANS, AND SEQUENCES: TEMPORARY SHORING, FORMWORK, AND BRACING: USE OF EQUIPMENT AND CONSTRUCTION PROCEDURES.

STANDARDS

ALL METHODS, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE (IBC) AND SEI/ASCE 7-16 "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES AS AMENDED BY LOCAL JURISDICTION

PROJECT LOCATION:

GPS LOCATION: 47.5876405 LAT., -122.1725013 LONGIT.
SITE ADDRESS: 12445 SE 25TH PL, BELLEVUE, WA 98005

STRUCTURAL DESIGN CRITERIA (CH. 16)

LATERAL FORCES:

I. WIND (IBC 1609 & ASCE 28.5.3):	II. SEISMIC (IBC 1613 & ASCE 12.14-12):
110 MPH WIND SPEED (ult) 85 MPH WIND SPEED (asd) EXPOSURE - B IMPORTANCE FACTOR Iw = 1.0 WIND SPEED UP: KzT=1.60 ANALYSIS: ENCLOSED SIMPLE DIAPHRAGM $p_s = \lambda * K_{ZT} * P_{s30}$	SEISMIC DESIGN CATEGORY - D2 OCCUPANCY RISK - II 2% PE IN 50 YR (2006 LAT-LON) USGS-CD: 0.2 SEC. (Ss) 1.36g 1.0 SEC. (S1) 0.474g BASIC SEISMIC FORCE-FORCE RESISTING SYSTEM LIGHT-FRAME (WOOD) SHEATHED DESIGN BASE SHEAR: 14.66K R = 6.5 F = 1.1 (2 STORY) ANALYSIS: SIMPLIFIED DESIGN PROCEDURE $V = \frac{F*SDS}{R} * W$

VERTICAL FORCES - GRAVITY (IBC 1607 & TABLE 1607.1)

VERTICAL LOADS:	DEAD LOAD	LIVE LOAD
ROOF	ACTUAL	25 PSF SNOW (OR PER LOCAL JURISDICTION)
FLOOR	ACTUAL	40 PSF
GARAGE	ACTUAL	50 PSF (or 3000# WHEEL LOAD)
DECK	ACTUAL	60 PSF

SOILS AND FOUNDATION DESIGN CRITERIA (IBC CH. 18):

SUBSURFACE INVESTIGATION SHALL BE REQUIRED PER 1803.2: FOUNDATION DESIGN SHALL BE BASED IN THE ABSENCE OF A SOILS REPORT, THE PRESUMPTIVE LOAD BEARING VALUES DETERMINED BY LOCAL JURISDICTION OR PER IBC TABLE 1806.2 SHALL BE USED:

1. SOIL BEARING PRESSURE 1500 PSF
2. ACTIVE PRESSURE - RESTRAINED 50 PCF
3. ACTIVE PRESSURE - UNRESTRAINED 35 PCF
4. PASSIVE RESISTANCE 300 PCF
5. COEFFICIENT OF FRICTION 0.40
6. LOCAL FROST DEPTH 12 INCH
7. TRAFFIC SURCHARGE 70 PSF
8. SEISMIC SURCHARGE 6H PSF

ALL FOOTINGS SHALL BEAR ON FIRM UNDISTURBED EARTH OR COMPACTED "STRUCTURAL BACKFILL". AREAS OVER EXCAVATED SHALL BE BACKFILLED WITH LEAN CONCRETE (f'c = 2000 PSI) OR STRUCTURAL BACK FILL.

CONCRETE (IBC CH. 19 & ACI 318-14)

CONCRETE: SHALL BE MADE WITH PORTLAND CEMENT ASTM C-150 TYPE II OR TYPE I AND SHALL BE READY-MIXED PER ASTM C-94, MAXIMUM SLUMP 5". MINIMUM CEMENT CONTENT 5½ SACKS PER YARD PROVIDE 5%-7% AIR-ENTRAINED CONCRETE FOR CONCRETE (f'c = 3000 PSI) EXPOSED TO WEATHER.

MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'c AT 28 DAYS) ACI 318-14		
USE OR LOCATION OF CONCRETE CONSTRUCTION:	f'c (PSI)	SPECIAL INSPECTION & TESTING REQUIRED
FOOTING PADS & FOUNDATIONS NOT EXPOSED TO WEATHER	3,000	NOT REQUIRED
PORCHES, PATIOS, DRIVEWAYS, AND GARAGE SLAB	3,000	NOT REQUIRED
FOUNDATION STEM WALLS AND INTERIOR SLABS ON GRADE	3,000	NOT REQUIRED

CONTRACTOR SHALL HAVE AVAILABLE ON SITE A CONCRETE BATCH TICKET OR RECEIPT OF DELIVERY FOR MIX OF 3000 PSI OR GREATER FOR BUILDING INSPECTOR VERIFICATION IF REQUESTED.

REINFORCING STEEL: REINFORCEMENT SHALL CONFORM TO ASTM A-615, "DEFORMED AND PLAIN BILLET STEEL BARS FOR REINFORCING STEEL". BARS SHALL BE GRADE 60 EXCEPT THAT NO. 3 AND 4 MAY BE GRADE 40. BARS SHALL BE DEFORMED. SPLICE SHALL BE 24 BAR DIAMETERS OR 18" MINIMUM. PROVIDE CORNER BARS FOR ALL HORIZONTAL BARS IN WALLS AND FOOTINGS AT INTERSECTIONS. MILL TICKET FOR REINFORCING BARS SHALL BE MADE AVAILABLE TO THE BUILDING INSPECTOR AND ENGINEER OF RECORD FOR VERIFICATION IF REQUESTED.

WIRE FABRIC SHALL CONFORM TO ANSI/ASTM A-185, STEEL WELDED WIRE FABRIC PLAIN FOR CONCRETE PLACEMENT.

CONCRETE ACCESSORIES:

ANCHOR BOLTS, BARS AND RODS SHALL CONFORM TO ASTM A-307' "LOW CARBON STEEL EXTERNALLY AND INTERNALLY THREADED FASTENERS".

CAST-IN-PLACE COLD-FORM STEEL CONNECTORS IN CONCRETE FOR LIGHT FRAME CONSTRUCTION SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE AS SPECIFIED IN THE CURRENT SIMPSON STRONG-TIE ICC ES OR IAPMO ES REPORT. ALTERNATE PRODUCTS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND WRITTEN APPROVAL. REQUEST FOR SUBSTITUTION WILL ONLY BE APPROVED WITH CURRENT ICC ES OR IAPMO ES REPORT AND A LIST STATING THE PROPOSED ITEM SUBSTITUTION WITH EQUIVALENT OR GREATER LOAD CAPACITY. IN ADDITION, **SUBSTITUTIONS WILL BE REQUIRED TO COMPLY WITH THE CURRENT ICC ACCEPTANCE CRITERIA, AC398** (CAST-IN-PLACE COLD-FORMED STEEL CONNECTORS IN CONCRETE FOR LIGHT FRAME CONSTRUCTION)

PROPRIETARY CAST-IN-PLACE ANCHOR BOLTS SHALL BE 'SB' AND 'SSTB' ANCHOR BOLTS MANUFACTURED BY SIMPSON STRONG-TIE AS SPECIFIED ON THEIR LATEST CATALOG AND ICC ESR-2611. SUBSTITUTION PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED WITH A CURRENT ICC ES REPORT TO THE STRUCTURAL ENGINEER FOR REVIEW AND WRITTEN APPROVAL. IN ADDITION, **SUBSTITUTIONS WILL BE REQUIRED TO COMPLY WITH THE CURRENT ICC ACCEPTANCE CRITERIA, AC399** (CAST-IN-PLACE PROPRIETARY BOLTS IN CONCRETE)

EXPANSION ANCHORS (WEDGE ANCHORS) SHALL BE AS NOTED ON PLANS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS. WHEN NOTED ON CONSTRUCTION DOCUMENTS, INSTALLATION SHALL BE SPECIAL INSPECTED.

NON-SHRINK GROUT: MASTER BUILDERS "MASTERFLOW 928 OR PRE-APPROVED EQUAL GROUT MAY BE PLACED FROM A 25 SECOND FLOW TO A STIFF PACKING CONSISTENCY. FILL OR PACK ENTIRE SPACE UNDER PLATES OR SHAPES. NO GROUTING SHALL BE DONE BELOW 40 DEGREES F.

EPOXY GROUT: SIMPSON STRONG-TIE "SET", COVERT OPERATIONS "CIA" GEL, OR PRE-APPROVED EQUAL. TWO PART LOW SAG EPOXY. USE EQUIPMENT, WHICH SHALL ACCURATELY MIX AND DISPENSE THE COMPONENTS. HOLES SHALL BE DRILLED AT THE DIAMETER AS SPECIFIED BY THE MANUFACTURER BASED ON THE DOWEL BAR OR THREADED ROD DIAMETER. HOLES SHALL BE DRY AND CLEANED WITH PRESSURIZED AIR JUST PRIOR TO INSTALLING GROUT. THE REBAR DOWEL OR THREADED ROD SHALL BE CLEAN AND INSTALLED SLOWLY, AND SHALL BE ROTATED AS IT IS PUSHED INTO THE HOLE. COLD WEATHER GROUTING SHALL BE DONE WITH PROPER GROUT FORMULA. EMBED (9) DIAMETERS MINIMUM UNLESS NOTED OTHERWISE IN PLANS AND DETAILS. GROUTING OPERATION SHALL BE INSPECTED BY AN AGENT AS RECOMMENDED BY THE OWNER.

WOOD CONSTRUCTION (IBC CH. 23 & NDS)

GENERAL REQUIREMENTS: PROVIDE MINIMUM NAILING PER 2018 IBC TABLE 2304.10.1 OR MORE, AS OTHERWISE SHOWN. PRESSURE TREAT ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY. PROVIDE CUT WASHERS WHERE BOLT HEADS, NUTS AND LAG SCREW HEADS BEAR ON WOOD. DO NOT NOTCH OR DRILL STRUCTURAL MEMBERS, EXCEPT AS ALLOWED BY IBC SECTIONS 2308.4.2.4 AND 2308.7.4 OR AS APPROVED PRIOR TO INSTALLATION.

WOOD SHEATHING : SHALL BE STRUCTURAL #1 PLYWOOD OR ORIENTED STRAND BOARD. PLYWOOD SHALL BE GROUP 1 OR GROUP 2 SPECIES, C-D GRADE EXPOSURE 1 CONFORMING TO PS 1-83. EACH PANEL SHALL BEAR THE GRADE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION. ORIENTED STRAND BOARD (OSB) SHALL BE APA RATED STRUCT.-1 FOR ROOF AND WALLS AND APA RATED STURDY-1-FLOOR FOR FLOORS. EACH PANEL SHALL BE CLASSIFIED AS EXPOSURE 1 AND SHALL BEAR THE GRADE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION (APA).

FRAMING LUMBER

STANDARDS: CONFORM TO WEST COAST LUMBER INSPECTION BUREAU (WCLIB), OR WESTERN WOOD PRODUCTS ASSOCIATION (WWPA). EACH PIECE SHALL BEAR THE SCLIB OR WWPA GRADE TRADE-MARK.

SPECIES AND GRADE - BASE DESIGN VALUES (PSI) per NDS								
	STRUCTURAL ELEMENT	SPECIES/GRADE	f_{bx}	f_{vx}	$f_{c\perp}$	f_c	f_t	E
1.	6x BEAMS AND HEADERS	DF NO. 2	875	170	625	600	425	1300000
2.	4x BEAMS AND HEADERS	DF NO. 2	900	180	625	1350	525	1600000
3.	2x JOIST	HF NO. 2	850	150	405	1300	525	1300000
4.	6x POST	DF NO. 1	1200	170	625	1000	825	1600000
5.	4X POST	DF NO. 2	850	180	625	1400	500	1600000
6.	5⅛x6 GLU-LAM POST	24F-V4, 24F-V8	2400	265	650	1650	1100	1700000
7.	GLU-LAM BEAM	24F-V4, 24F-V8	2400	265	650	1650	1100	1800000
8.	3½x OR 5¼x PSL BEAM	PARALLAM PSL	2900	290	750	2900	-	2000000
9.	3½x OR 5¼x LVL BEAM	MICROLLAM LVL	2600	285	750	2510	-	1900000
10.	3½x OR 5¼x LSL BEAM	TIMBERSTRAND LSL	1700	400	680	1400	-	1300000
11.	2x WALL FRAMING	HF NO. 2	850	150	405	1300	525	1300000
12.	2x WALL FRAMING > 15FT	DF NO. 1	1000	180	625	1500	675	1700000

GLUE-LAMINATED MEMBERS: CONFORM TO ANSI/AITC A190.1. MEMBERS SHALL BE COMBINATION 24F-V4 DOUGLAS FIR FOR SIMPLE SPANS, 24F-V8 DOUGLAS FIR FOR CANTILEVERED SPANS WITH EXTERIOR GLUE.

I-JOISTS: SHALL BE TRUS JOIST MACMILLAN, OR APPROVED EQUAL, AS INDICATED ON THE STRUCTURAL DRAWINGS. I-JOISTS SHALL BE MANUFACTURED IN ACCORDANCE WITH A CURRENT ICBO REPORT AND APPROVED SHOP AND INSTALLATION DRAWINGS.

WOOD CONSTRUCTION CONNECTORS: SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE AS SPECIFIED IN THEIR LATEST CATALOG. PROVIDE MAXIMUM SIZE AND QUANTITY OF NAILS, BOLTS, OR SCREWS SPECIFIED ON CONNECTOR HARDWARE. CONTRACTOR'S PROPOSED SUBSTITUTION OF OTHER MANUFACTURE'S CONNECTORS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO ORDERING. REQUESTS FOR SUBSTITUTION SHALL INCLUDE CURRENT ICC AND/OR IAPMO ES REPORTS AND A LIST STATING THE PROPOSED ITEM-FOR-ITEM SUBSTITUTION HAS AN EQUIVALENT OR GREATER LOAD CAPACITY. IN ADDITION, SUBSTITUTIONS SHALL COMPLY WITH CURRENT ICC ACCEPTANCE CRITERIA AC13 AND/OR IAPMO EVALUATION CRITERIA 002-2007 FOR JOIST HANGERS AND SIMILAR DEVICES AND ICC AC 155 FOR HOLDOWNS AND TENSION TIES. BOLTS IN WOOD CONNECTORS SHALL CONFORM TO ASTM A-307, GRADE A.

STRUCTURAL WOOD SCREWS: WHERE SPECIFIED OR REQUIRED BY SPECIFIC HARDWARE, SCREWS SHALL BE 'SDS' STRONG-DRIVE SCREWS MANUFACTURED BY SIMPSON STRONG-TIE AS SPECIFIED IN THEIR LATEST CATALOG AND ICC ESR-2236. SUBSTITUTION PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED WITH A CURRENT ICC ES REPORT TO THE STRUCTURAL ENGINEER FOR REVIEW AND WRITTEN APPROVAL. IN ADDITION, SUBSTITUTIONS SHALL COMPLY WITH CURRENT ICC ACCEPTANCE CRITERIA AC233 (ALTERNATE DOWEL TYPE THREADED FASTENERS)

REQUIREMENTS FOR FASTENERS IN TREATED MATERIAL: ALL HARDWARE AND FASTENERS IN PRESSURE TREATED MATERIAL SHALL BE SIMPSON G185 HDG (HOT DIPPED GALVANIZED) OR SST300 STAINLESS STEEL CONNECTORS OR EQUIVALENT.

HOT DIPPED GALVANIZED FASTENERS SHALL BE USED WITH G185 Z-MAX AND HDG CONNECTORS AND STAINLESS STEEL FASTENERS SHALL BE USED WITH SST300 CONNECTORS. DO NOT USE STAINLESS STEEL FASTENERS WITH G185 Z-MAX OR HDG CONNECTORS.

ALL ANCHOR BOLTS, WASHERS, AND NUTS SHALL BE HOT DIPPED GALVANIZED.

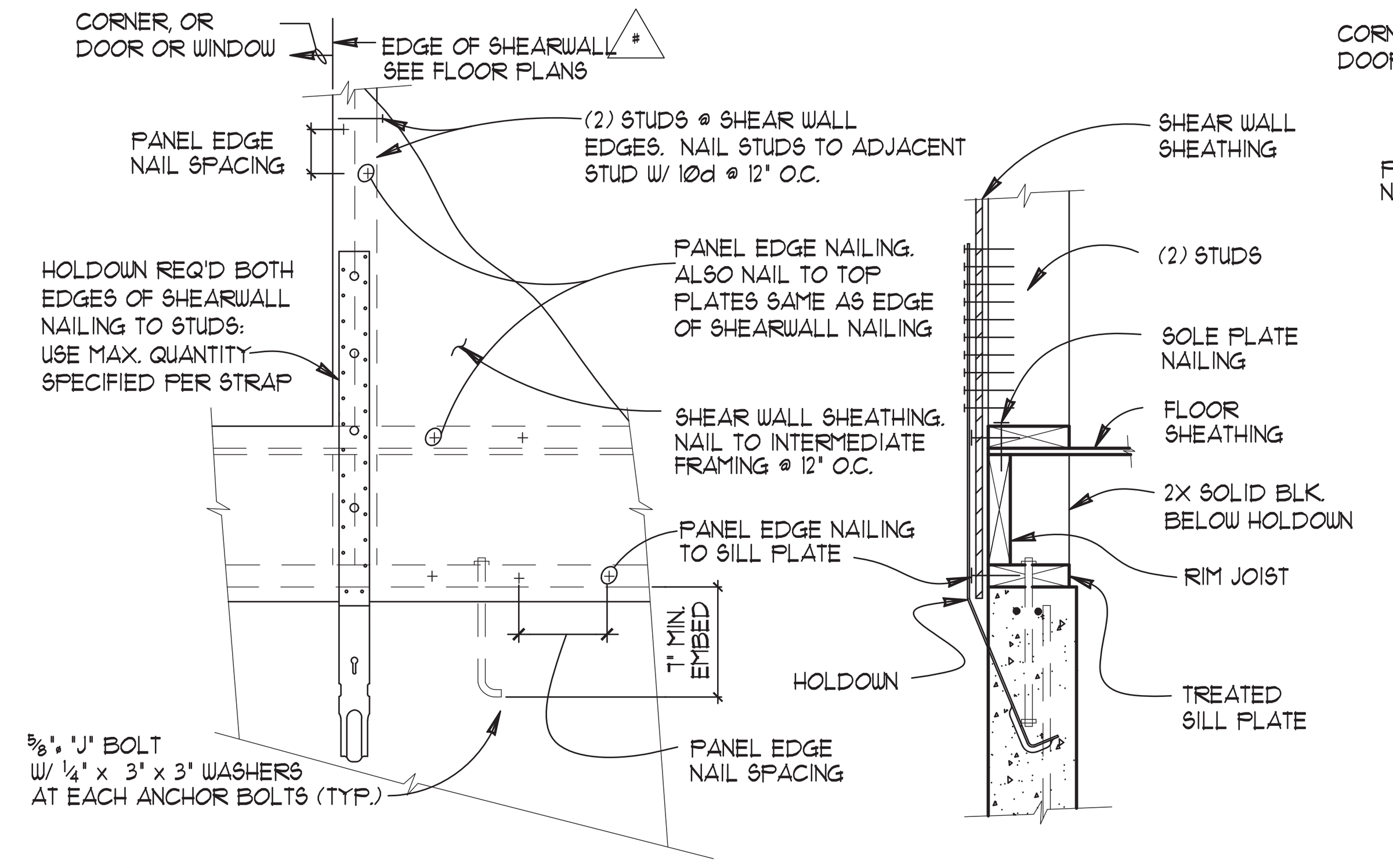
HOT DIPPED OR STAINLESS STEEL NAILS MUST BE USED WHEN FASTENING SHEATHING, STUDS, AND JOIST INTO TREATED MUDSILL. HOT DIPPED GALVANIZED OR STAINLESS STEEL FASTERES SHALL BE USED WHEN FASTENING DECKING TO TREATED MEMBERS.

WOOD TRUSSES (IBC 2303.4) SHALL BE:

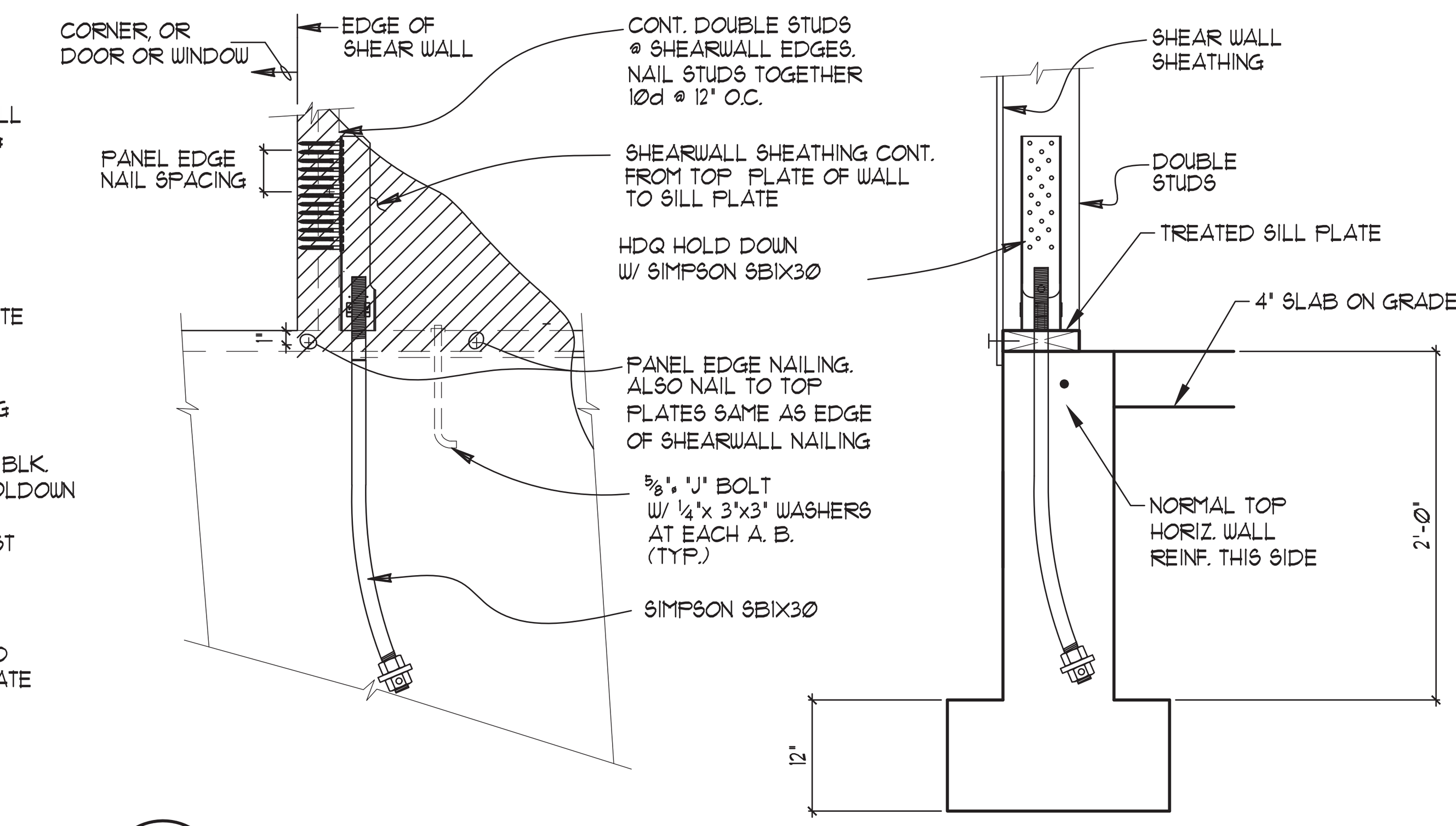
1. DESIGNED PER IBC 2303.4.1.1 TO CARRY LOADS LISTED IN THE DESIGN CRITERION AND ANY ADDITIONAL POINT LOADS, UNIFORM LOADS, OR DRAG STRUT FORCES NOTED ON FRAMING PLANS.
2. NON-ATTIC STORAGE TRUSSES SHALL BE DESIGNED WITH A LIVE LOAD OF 20 PSF LOCATED IN THE PLANE OF THE TRUSS. THE MAXIMUM STORAGE SPACE ABOVE THE BOTTOM CHORD SHALL BE LESS THAN 42" HIGH AND 24" WIDE.
3. TRUSS DESIGN DRAWINGS AND DOCUMENT SUBMITTAL (2303.4.1.1) SHALL INCLUDE STRESS ANALYSIS AND PICTORIAL DEPICTION OF EACH TRUSS TYPE FOR THE PROJECT AND INCLUDING A TRUSS PLACEMENT DIAGRAM (2303.4.2). TRUSS INSTALLATION DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER IN THE STATE OF WASHINGTON. APPROVED TRUSS DOCUMENTS SHALL REMAIN ON THE JOB SITE FOR INSPECTION.
4. ALTERATIONS (2303.4.5): TRUSS MEMBERS SHALL NOT BE NOTCHED, DRILLED, SPLICED, OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN APPROVAL OF THE TRUSS DESIGNER. ALTERATIONS RESULTING IN THE ADDITION OF LOADS TO ANY MEMBER (E.G. HVAC EQUIPMENT, PIPING, ETC.) SHALL NOT BE PERMITTED WITHOUT APPROVAL OF TRUSS DESIGNER.
5. TPI 1 SPECIFICATIONS: THE DESIGN, MANUFACTURE, FABRICATION, AND QUALITY ASSURANCE OF METAL-PLATE-CONNECTED WOOD TRUSSES SHALL BE IN ACCORDANCE WITH TPI 1.
6. THE TRUSS TEMPORARY AND PERMANENT BRACING SHALL BE PER IRC SECTIONS 502.11.2 AND 802.10.3 AS WELL AS TRUSS PLATE INSTITUTES' BUILDING COMPONENT SAFETY INFORMATION.
7. UNLESS NOTED OTHERWISE ON PLANS, ALL TRUSSES SHALL HAVE SIMPSON H-1 CLIPS AT EXTERIOR BEARING WALLS. AT GABLE END TRUSSES, PROVIDE SIMPSON A35 AT 24" O.C.
8. PROVIDE STC CLIPS AT ALL TRUSSES OVER NON-BEARING WALLS.
9. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE JOB SITE AT THE TIME OF INSPECTION, FOR INSPECTOR'S USE AND REFERENCE.

MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE JOB SITE AT THE TIME OF INSPECTION, FOR THE INSPECTOR'S USE AND REFERENCE.

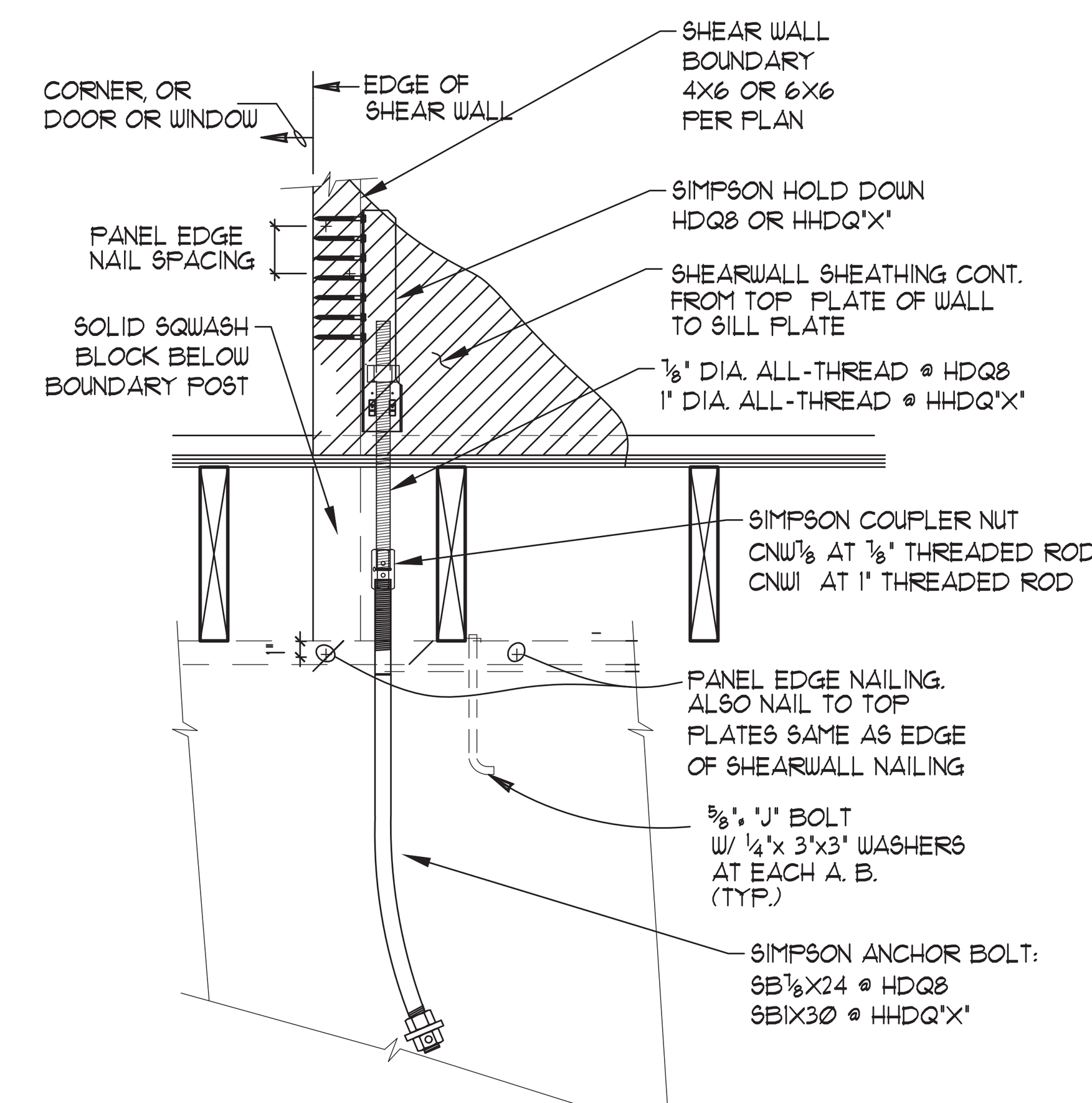
INSPECTION: (IBC CH. 1 SECT. 110)
CONSTRUCTION SHALL BE SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL AND SUCH CONSTRUCTION OR WORK SHALL REMAIN ACCESSIBLE AND EXPOSED FOR CONTINUING INSPECTION UNTIL APPROVED. THE OWNER OR CONTRACTOR SHALL NOTIFY THE BUILDING OFFICIAL TO MAKE THE INSPECTIONS SET FORTH IN SECTIONS 110.3.1 THROUGH 110.3.10. INSPECTION REQUESTS SHALL BE THE RESPONSIBILITY OF THE BUILDING PERMIT HOLDER. WORK SHALL NOT PROCEED BEYOND THE POINT INDICATED IN EACH SUCCESSIVE INSPECTION WITHOUT OBTAINING THE APPROVAL OF THE BUILDING OFFICIAL. THE BUILDING OFFICIAL SHALL INDICATE ANY OF CONSTRUCTION THAT IS SATISFACTORY AS COMPLETED, OR NOTIFY THE CONTRACTOR ANY PORTIONS THAT ARE NOT IN COMPLIANCE TO THIS CODE. ANY PORTIONS THAT DO NOT COMPLY SHALL BE CORRECTED BY THE CONTRACTOR AND SUCH PORTION(S) SHALL NOT BE COVERED OR CONCEALED UNTIL AUTHORIZED OR SIGNED OFF BY THE BUILDING OFFICIAL.

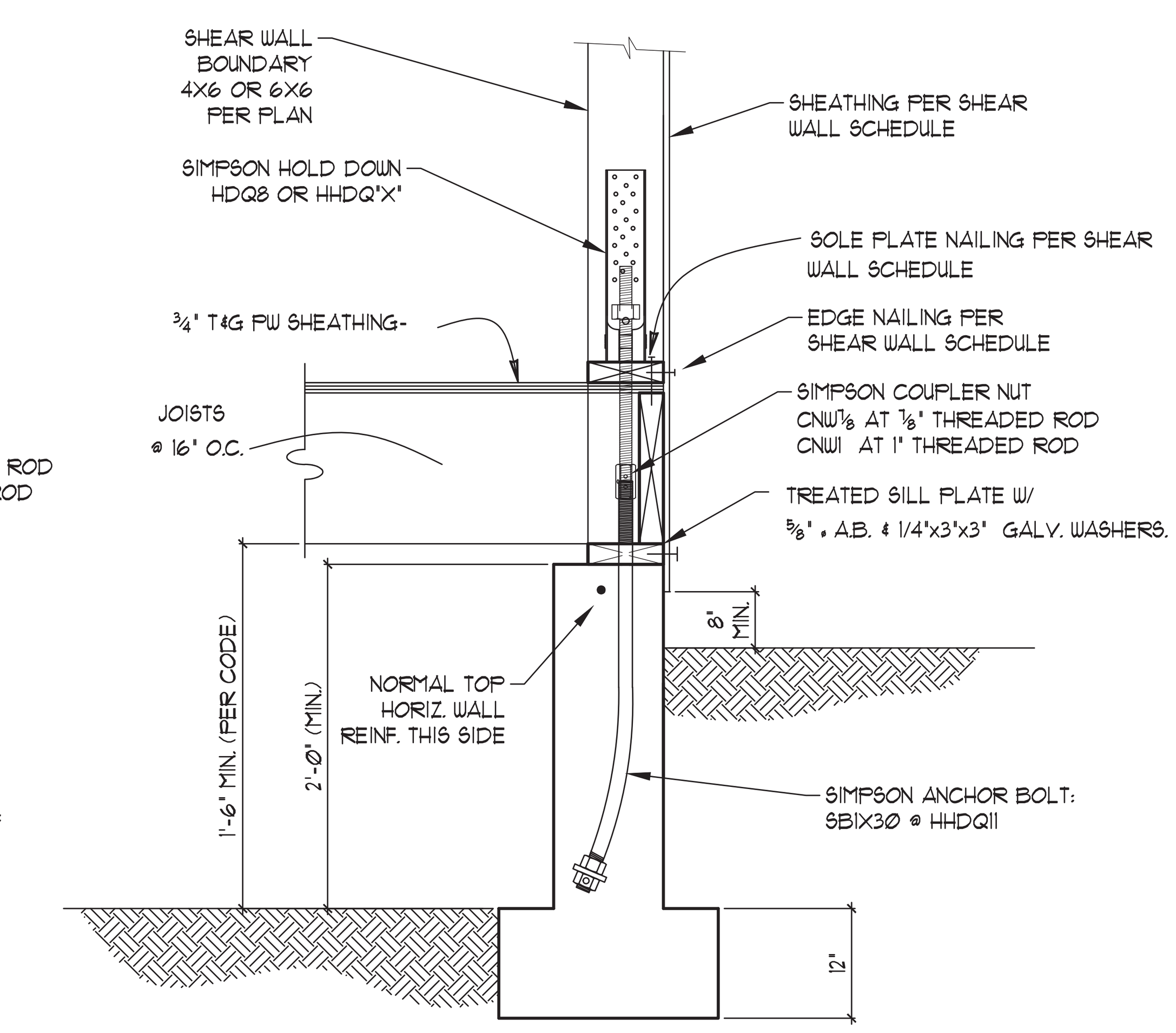


B DETAIL - STRAP HOLDOWN
1"=1'-0"



N2 DETAIL - SIMPSON "HDQ" @ SILL PLATE
1"=1'-0"





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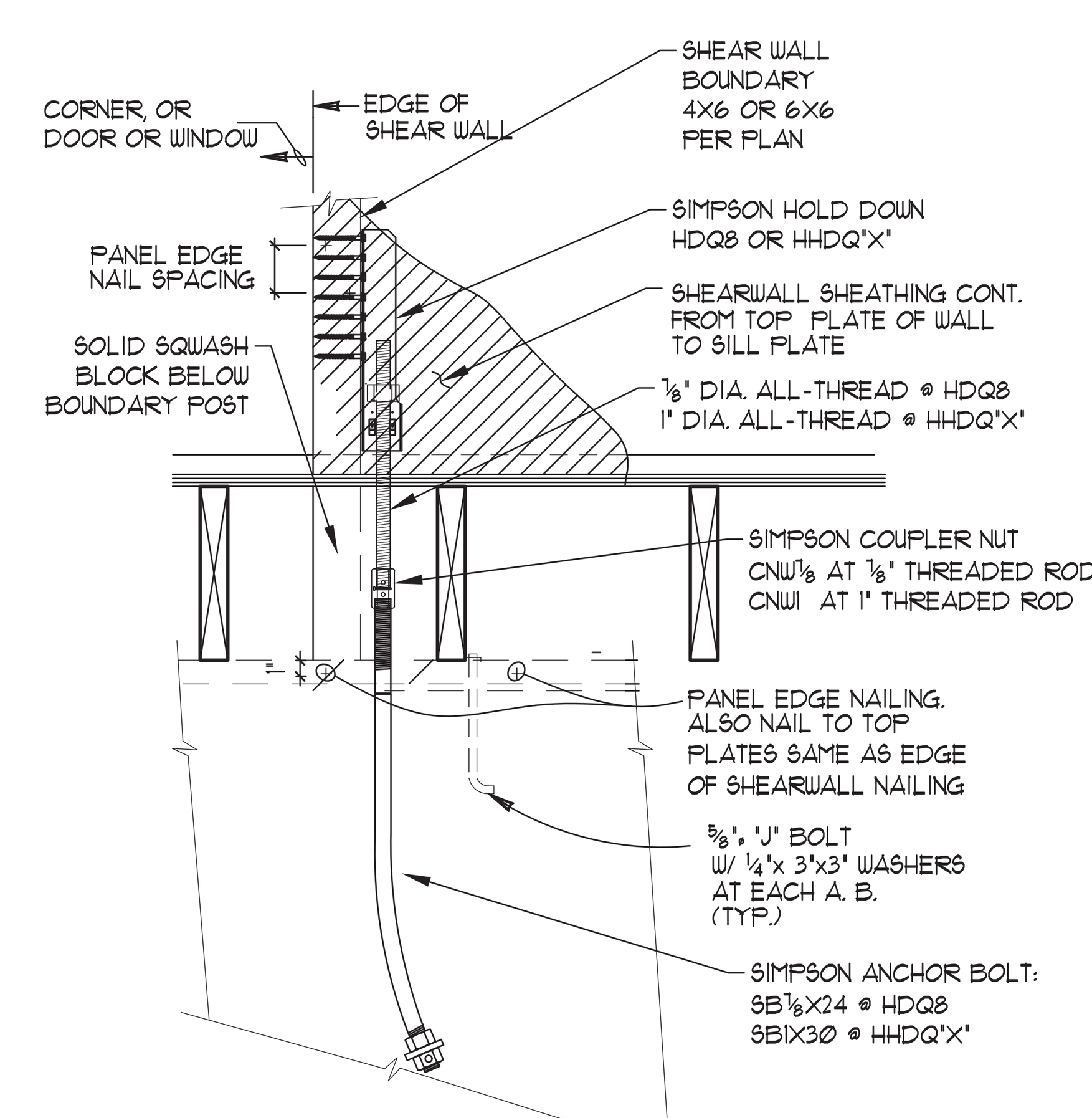

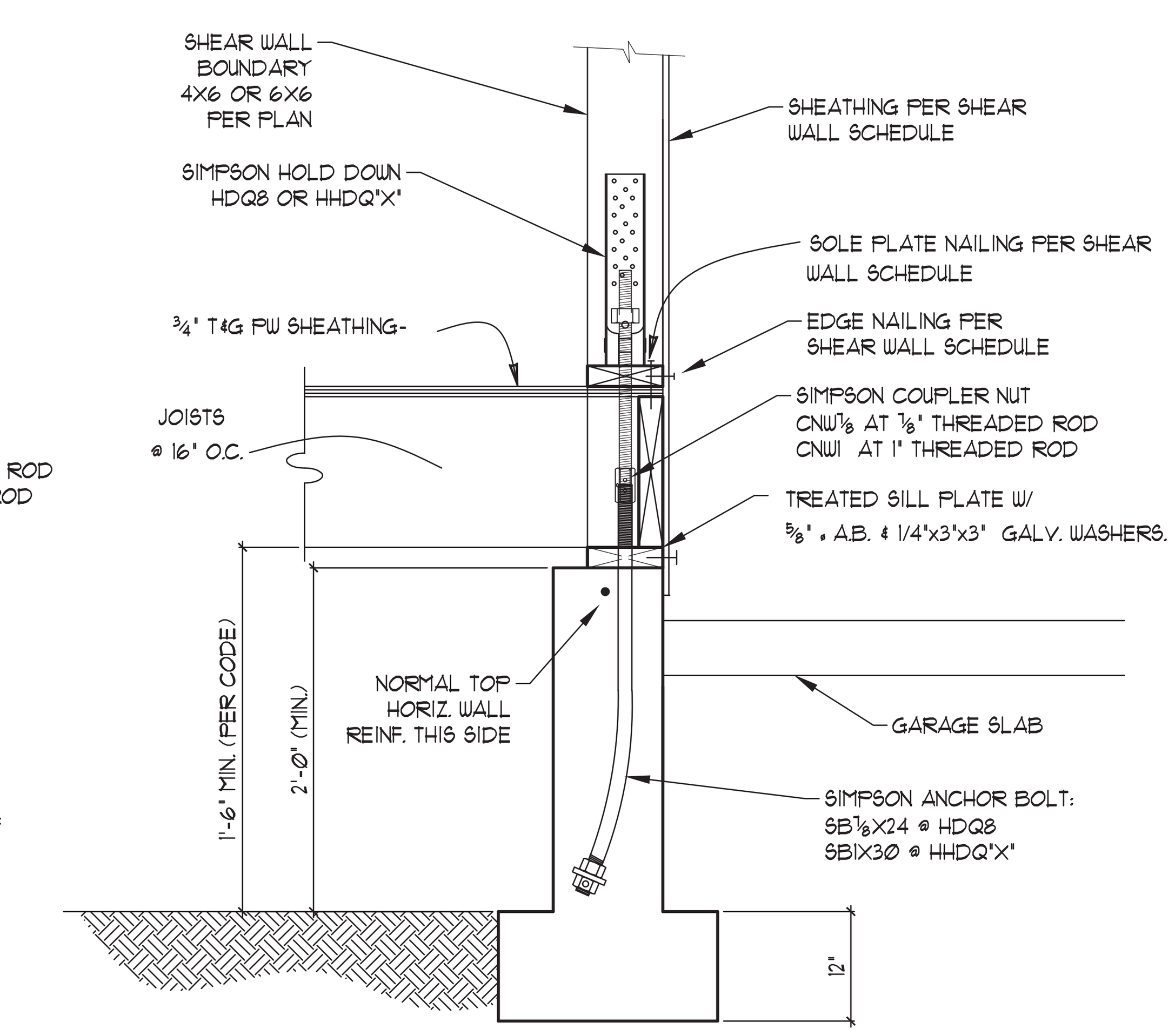

N5 DETAIL - SIMPSON "HDQ" @ SILL PLATE
1"=1'-0"

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Contents
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EXPIRES JANUARY 21, 2024

NM ENGINEERING

PERMIT ISSUE: 06/15/2022
DESIGN BY: NPN
REV. DATE:
COMMENTS:
PLOT DATE: 06/15/2022

Project # : 12022
Sheet S1.1

SHEARWALL SCHEDULE (1)(2)(4)

WALL TYPE	(5) SHTG.	(3) EDGE NAILING LENGTH x GAGE)	(6) FIELD NAILING LENGTH x GAGE)	5/8" DIA. A.B. SPACING SOLE PLATE NAILING (GA.)	ABUTTING VERT. PW EDGES	ABUTTING HORIZ. PW EDGES	(9) SOLE PL	MUD SILL	BOUNDARY FRAMING (VERT.)	HOLDOWN TYPES	HOLDOWN BOLTS	REMARKS / DETAILS	SHEAR (PLF)	UPLIFT FORCE
1 (7) DF	15/32" PW	8d @ 3" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	5/8" A.B. @ 36" O.C. 16d @ 8" O.C. (3-½" X Ø.135")	2x6	2x6	2x6	2x6	4X6	HDQ8	SB7/8X24	N5/S1.1	287 plf	4.1 k
2 (8)	15/32" PW	8d @ 3" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	5/8" A.B. @ 24" O.C. 16d @ 8" O.C. (3-½" X Ø.135")	2x6	2x6	2x6	2x6	2-2x6	STHD14RJ		B/S1.1	219 plf	2.4 k
3	15/32" OSB	8d @ 4" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	5/8" A.B. @ 36" O.C. 16d @ 8" O.C. (3-½" X Ø.135")	2x6	2x6	2x6	2x6	2-2x6	STHD14RJ		B/S1.1	274 plf	3.5 k
4	15/32" OSB	8d @ 6" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	5/8" A.B. @ 24" O.C. 16d @ 4" O.C. (3-½" X Ø.135")	3x6	3x6	3x6	3x6	4X6	HHDQ11	SB1X30	N4/S1.1	487 plf	5.6 k
Ø1	15/32" OSB	8d @ 6" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	5/8" A.B. @ 48" O.C. 16d @ 16" O.C. (3-½" X Ø.135")	2x6	2x6	2x6	2x6		NONE			223 plf	Ø.Ø k
5	15/32" PW	10d @ 3" O.C. (3" X 0.131")	10d @ 12" O.C. (3" X 0.131")	16d @ 4" O.C. (3-½" X Ø.135")	2x6	2x6	2x6	2x6	2-2x6			C/S3 J/S3	401 plf	4.1 k
6	15/32" PW	8d @ 3" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	5/8" A.B. @ 36" O.C. 16d @ 8" O.C. (3-½" X Ø.135")	2x6	2x6	2x6	2x6	2-2x6			C/S3 J/S3	343 plf	3.4 k
7	15/32" PW	8d @ 4" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	5/8" A.B. @ 36" O.C. 16d @ 8" O.C. (3-½" X Ø.135")	2x6	2x6	2x6	2x6	2-2x6			C/S3 J/S3	243 plf	3.9 k
8	15/32" PW	8d @ 4" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	5/8" A.B. @ 36" O.C. 16d @ 8" O.C. (3-½" X Ø.135")	2x6	2x6	2x6	2x6	2-2x6			C/S3 J/S3	150 plf	Ø.5 k
Ø	15/32" PW	8d @ 4" O.C. (2-½" X 0.131")	8d @ 12" O.C. (2-½" X 0.131")	16d @ 3" O.C. (3-½" X Ø.135")	3x6	3x6	3x6		2-2x6	NONE			< 223 plf	Ø.Ø k

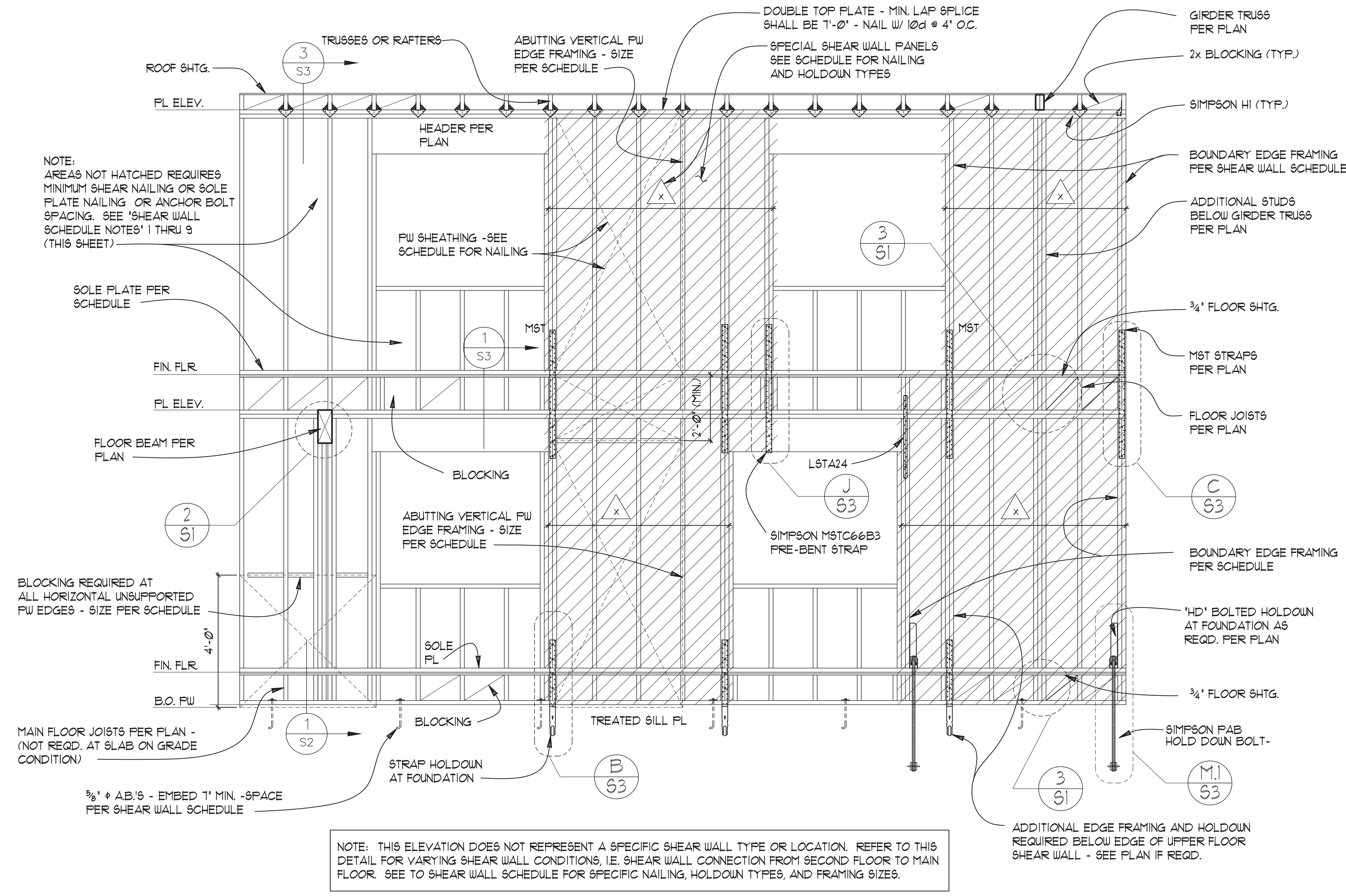
NOTE: FOR ALL OTHER EXTERIOR WALLS NOT SPECIFIED IN SCHEDULE ABOVE, SEE NOTE 2. IN 'SHEAR WALL SCHEDULE NOTES' .

SHEAR WALL SCHEDULE NOTES MAIN FLOOR):

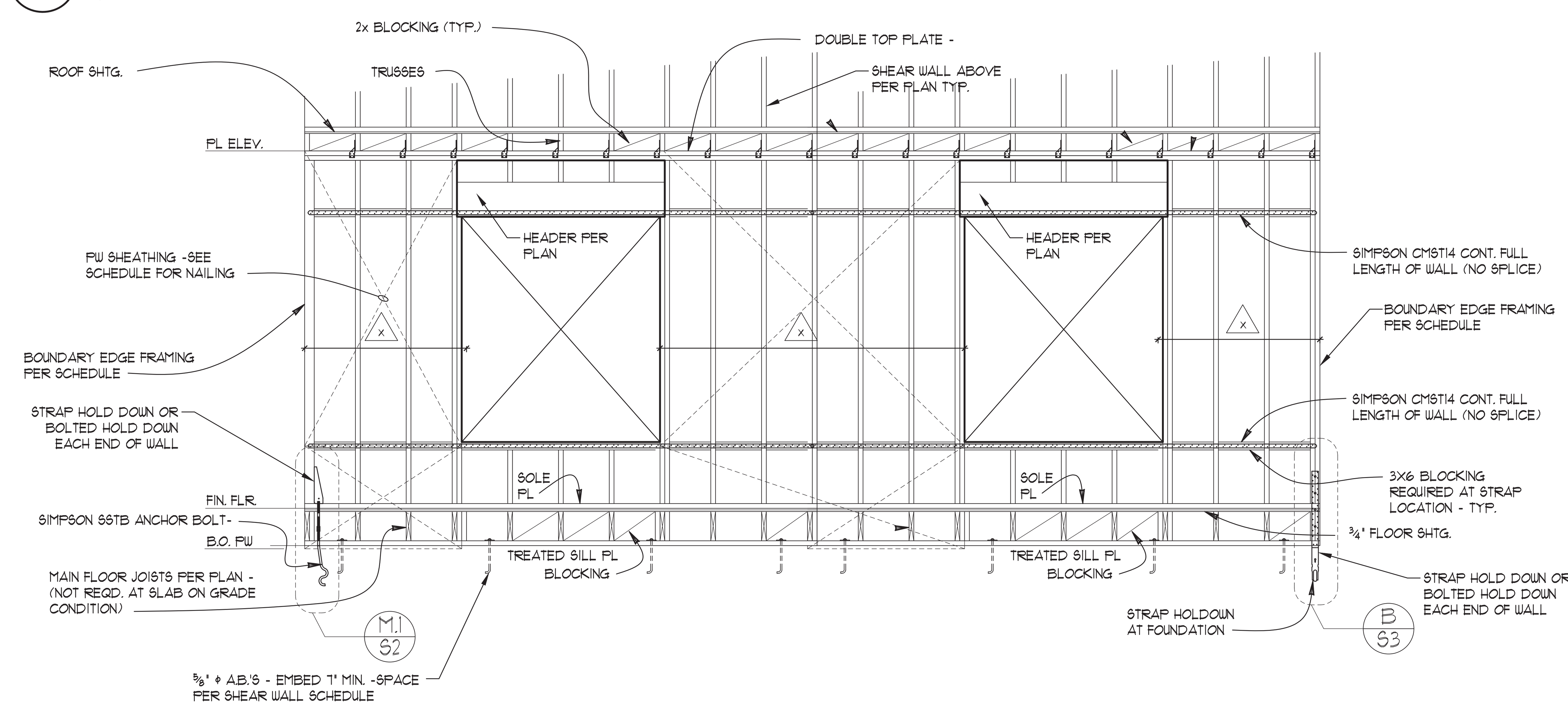
1. SHEAR WALLS NOTED IN SCHEDULE ARE WALLS WITH ADDITIONAL EDGE NAILING, ABUTTING HORIZONTAL AND VERTICAL EDGE FRAMING, AND ANCHOR BOLT SPACING. FIELD NAIL SIZE SHALL MATCH THE EDGE FRAMING SPECIFIED AND BE SPACED AT 12" O.C. SHEAR NAILING APPLIES TO ALL VERTICAL AND HORIZONTAL ABUTTING SHTG. EDGES, DOUBLE TOP PLATES, AND SOLE PLATES.
2. ALL EXTERIOR WALLS NOT SPECIFIED IN SHEAR WALL SCHEDULE, SHALL BE DESIGNATED AS MINIMUM SHEAR PANELS WITH EDGE NAIL SIZE MATCHING SPECIFIED NAILS IN SCHEDULE AND SPACED AT 6" O.C. FIELD NAIL SPACING SHALL BE 12" O.C.
3. SHEATHING SHALL BE 7/16" OSB UNLESS SPECIFIED 15/32" STRUCTURAL #1 IN SCHEDULE.
4. EXTERIOR SHEAR WALL FRAMING SHALL BE 2X6 HEM FIR #2 UNLESS NOTED "DF" (DOUG FIR) IN SCHEDULE. FRAMING SHALL BE SPACED AT 16" O.C.
5. INTERIOR SHEAR WALL FRAMING SHALL BE 2X4 (OR 2X6 PER SCHEDULE) HEM FIR #2 SPACED AT 16" O.C.
6. EDGE FRAMING OR END OF SHEAR WALLS SHALL BE FRAMED WITH: (2) MINIMUM 2X6 (2X6 WALLS), (2) 2X4 (2X4 WALLS), OR SOLID SAWN POSTS AS NOTED IN THE SCHEDULE.
7. BLOCK ALL UNSUPPORTED HORIZONTAL SHEATHING EDGES WITH 2X6 OR 3X6 AS NOTED IN SCHEDULE. ALL VERTICAL ABUTTING SHEATHING EDGES SHALL BE 2X6 FOR EXTERIOR WALLS OR 2X4 FOR INTERIOR WALLS OR AS NOTED IN SCHEDULE.
8. SOLE PLATE SHALL BE 2X6 FOR EXTERIOR WALLS . SOLE PLATE SHALL BE 2X4 OR 2X6 FOR INTERIOR WALLS. SOLE PLATE NAILING SHALL BE 16d SPACED 12" O.C (MAX. OR LESS AS SPECIFIED IN SCHEDULE)
9. MUD SILLS SHALL BE 2X6 HF #2 P.T. CONTINUOUS AROUND PERIMETER OF FOUNDATION WALL.
10. FOUNDATION ANCHOR SHALL BE 5/8" DIA. X 10" A.B. FOR 2X6 MUD SILL OR 5/8" DIA. X 12" A.B. FOR 3X6 MUD SILLS. IF NOT SPECIFIED BY THE SHEAR WALL SCHEDULE, ANCHOR BOLTS SHALL BE SPACED NO MORE THAN 48" O.C. ALL ANCHOR BOLTS SHALL BE EMBEDDED IN CONCRETE 7" MIN. PROVIDE (2) MINIMUM A.B.'S FOR EACH MUD SILL SECTION.
11. PROVIDE 3"X3"X¼" GALV. WASHERS FOR EACH ANCHOR BOLT. THE CONTRACTOR MAY USE 3"X3"X¼" GALV. WASHERS WITH DIAGONAL SLOTTED HOLES IF STANDARD CUT WASHERS ARE USED AND PLACED ABOVE THE SLOTTED PLATE WASHERS.

SHEAR WALL SCHEDULE NOTES (UPPER FLOOR):

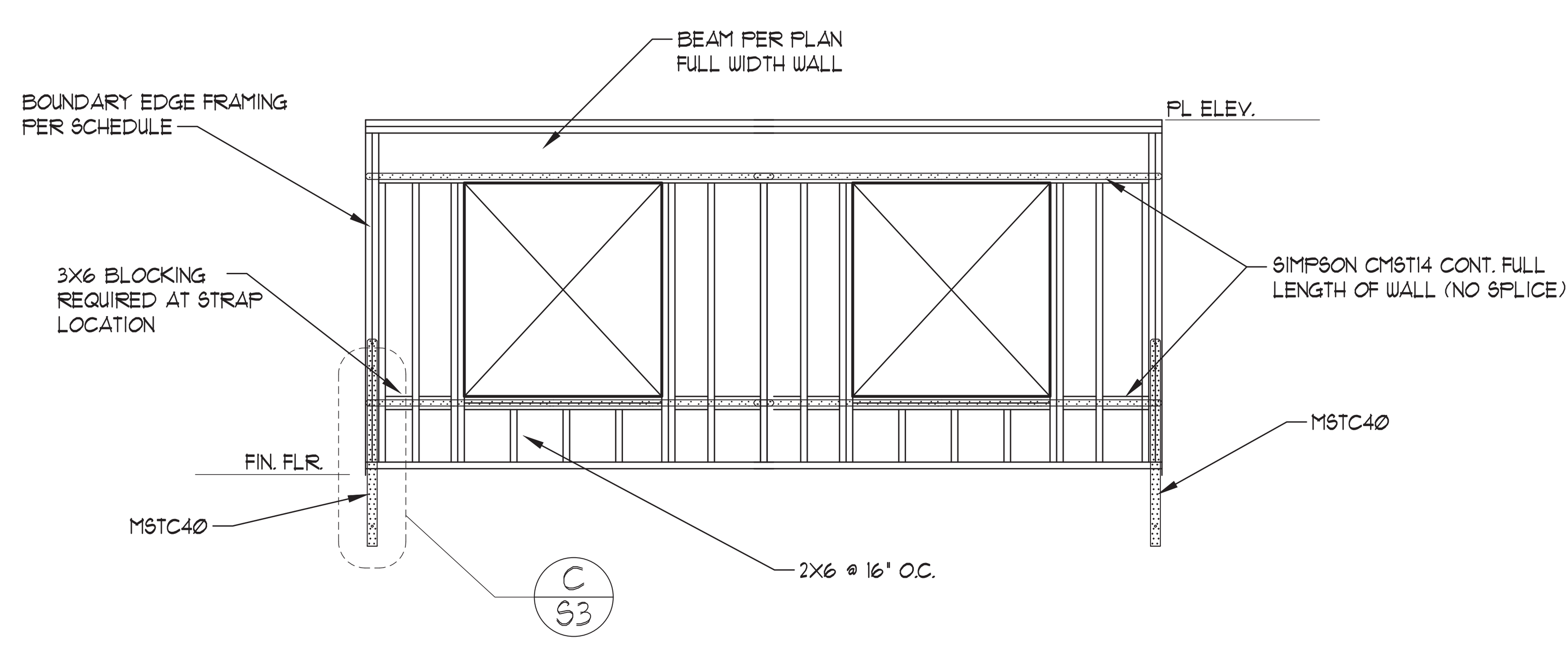
1. SHEAR WALLS NOTED IN SCHEDULE ARE WALLS WITH ADDITIONAL EDGE NAILING, ABUTTING HORIZONTAL AND VERTICAL EDGE FRAMING, AND ANCHOR BOLT SPACING. FIELD NAIL SIZE SHALL MATCH THE EDGE FRAMING SPECIFIED AND BE SPACED AT 12" O.C. SHEAR NAILING APPLIES TO ALL VERTICAL AND HORIZONTAL ABUTTING SHTG. EDGES, DOUBLE TOP PLATES, AND SOLE PLATES.
2. ALL EXTERIOR WALLS NOT SPECIFIED IN SHEAR WALL SCHEDULE, SHALL BE DESIGNATED AS MINIMUM SHEAR PANELS WITH EDGE NAIL SIZE MATCHING SPECIFIED NAILS IN SCHEDULE AND SPACED AT 6" O.C. FIELD NAIL SPACING SHALL BE 12" O.C.
3. SHEATHING SHALL BE 7/16" OSB UNLESS SPECIFIED 15/32" STRUCTURAL #1 IN SCHEDULE.
4. EXTERIOR SHEAR WALL FRAMING SHALL BE 2X6 HEM FIR #2 UNLESS NOTED "DF" (DOUG FIR) IN SCHEDULE. FRAMING SHALL BE SPACED AT 16" O.C.
5. INTERIOR SHEAR WALL FRAMING SHALL BE 2X4 (OR 2X6 PER SCHEDULE) HEM FIR #2 SPACED AT 16" O.C.
6. EDGE FRAMING OR END OF SHEAR WALLS SHALL BE FRAMED WITH: (2) MINIMUM 2X6 (2X6 WALLS), (2) 2X4 (2X4 WALLS), OR SOLID SAWN POSTS AS NOTED IN THE SCHEDULE.
7. BLOCK ALL UNSUPPORTED HORIZONTAL SHEATHING EDGES WITH 2X6 OR 3X6 AS NOTED IN SCHEDULE. ALL VERTICAL ABUTTING SHEATHING EDGES SHALL BE 2X6 FOR EXTERIOR WALLS OR 2X4 FOR INTERIOR WALLS OR AS NOTED IN SCHEDULE.
8. SOLE PLATE SHALL BE 2X6 FOR EXTERIOR WALLS . SOLE PLATE SHALL BE 2X4 OR 2X6 FOR INTERIOR WALLS. SOLE PLATE NAILING SHALL BE 16d SPACED 12" O.C (MAX. OR LESS AS SPECIFIED IN SCHEDULE)



1 ELEVATION - TWO STORY FRAMING OR SHEAR WALL (HATCHED)
3/8" = 1'-0"



B/S1.2 ELEVATION - SHEAR TRANSFER SHEAR WALL - MULTIPLE WINDOWS
3/8" = 1'-0"



C/S1.2 ELEVATION - SHEAR TRANSFER SHEAR WALL
3/8" = 1'-0"

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PERMIT ISSUE: 06/15/2022	DESIGN BY : NPN
REV. DATE:	COMMENTS :
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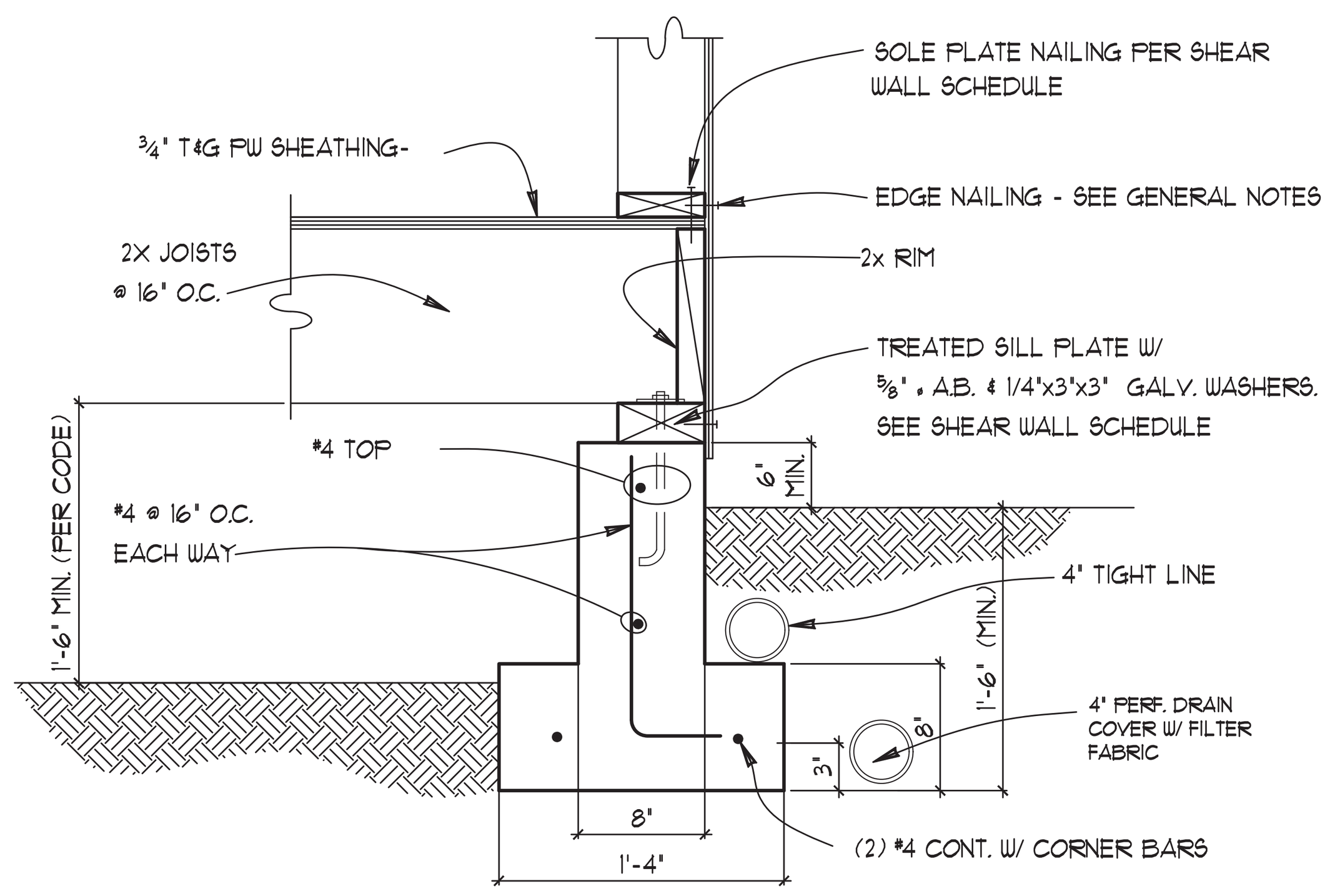
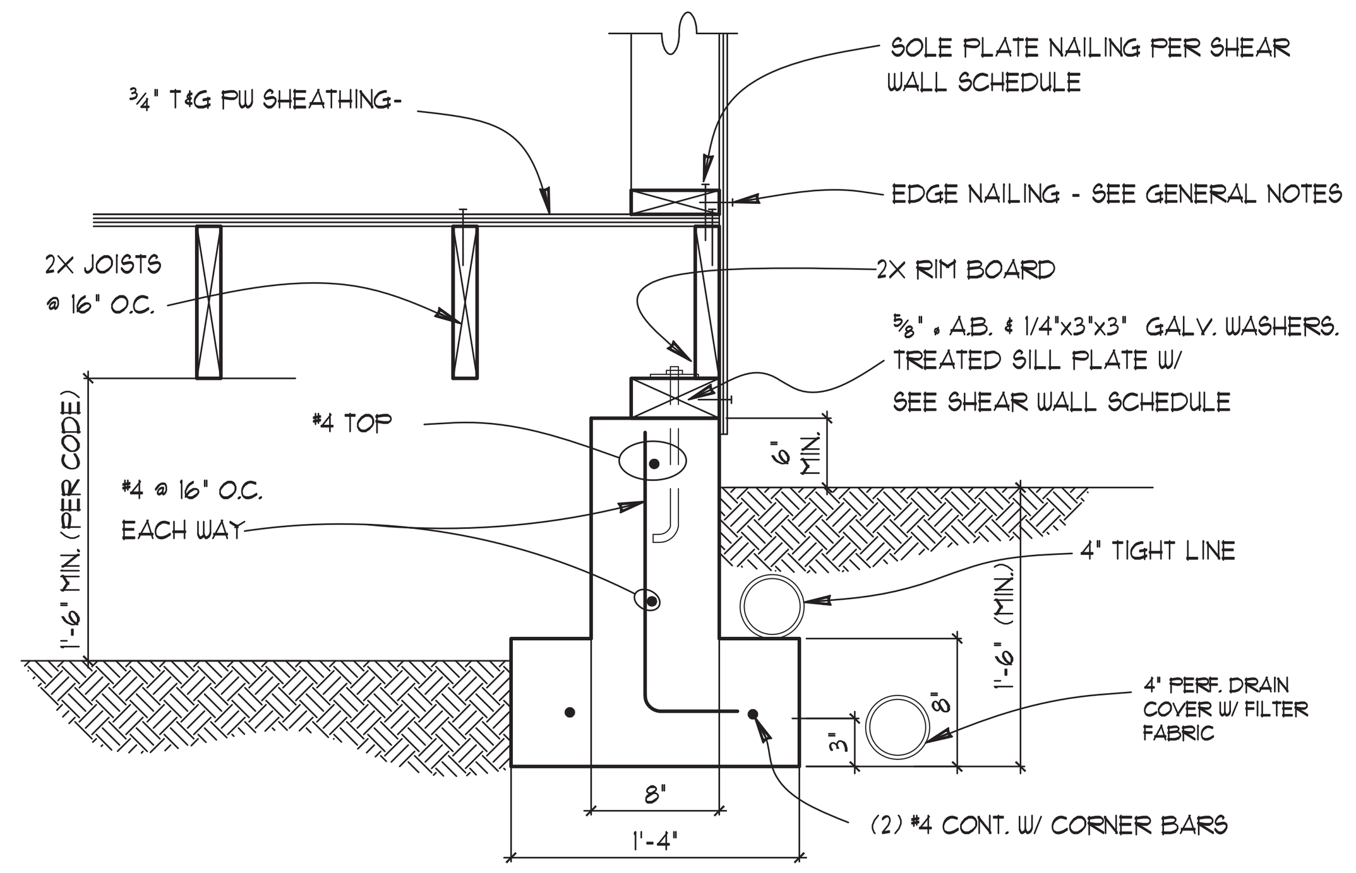
PLOT DATE: 06/15/2022

Project # : 12022

Sheet S1.2



1 SECTION
1" = 1'-0"



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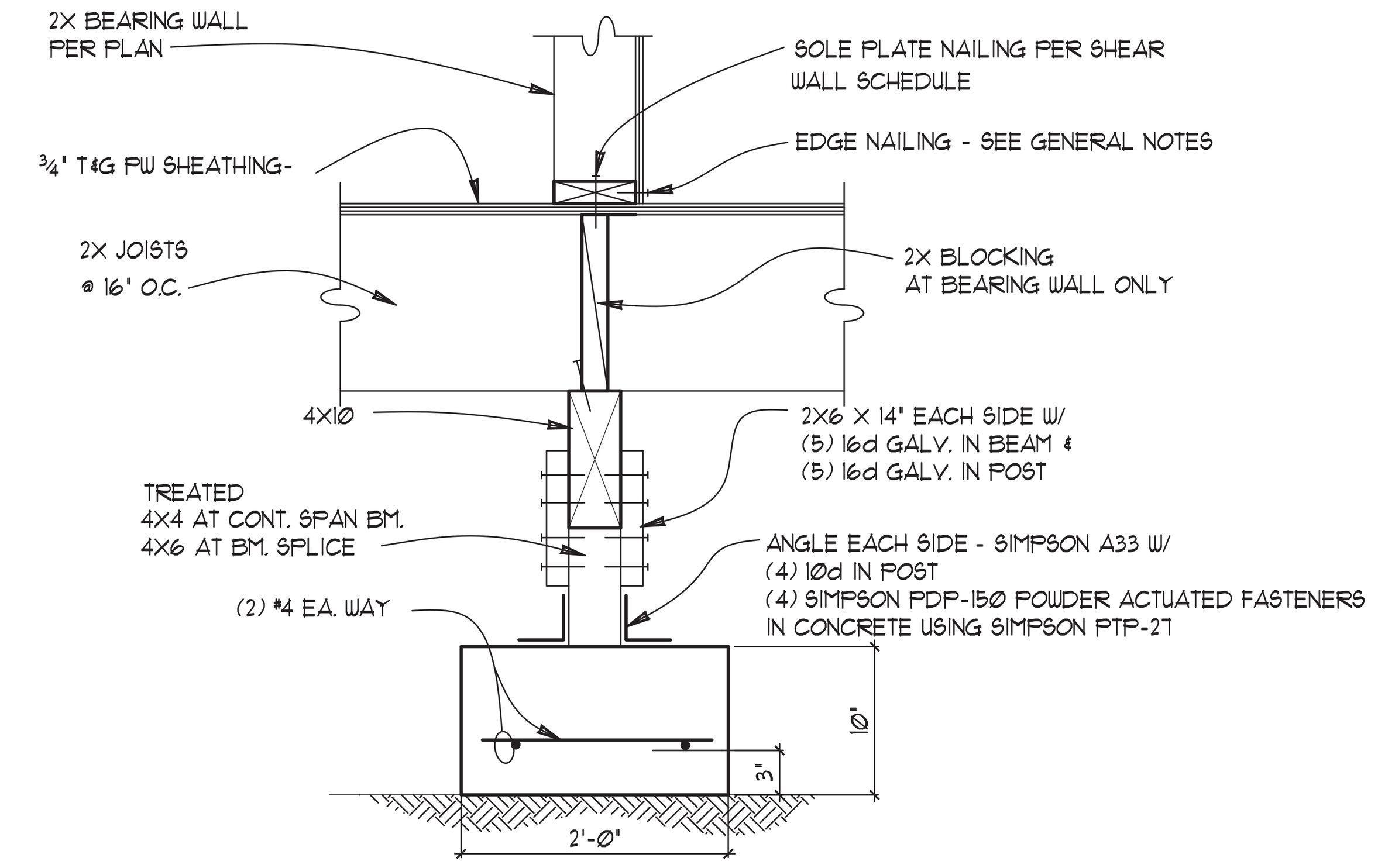

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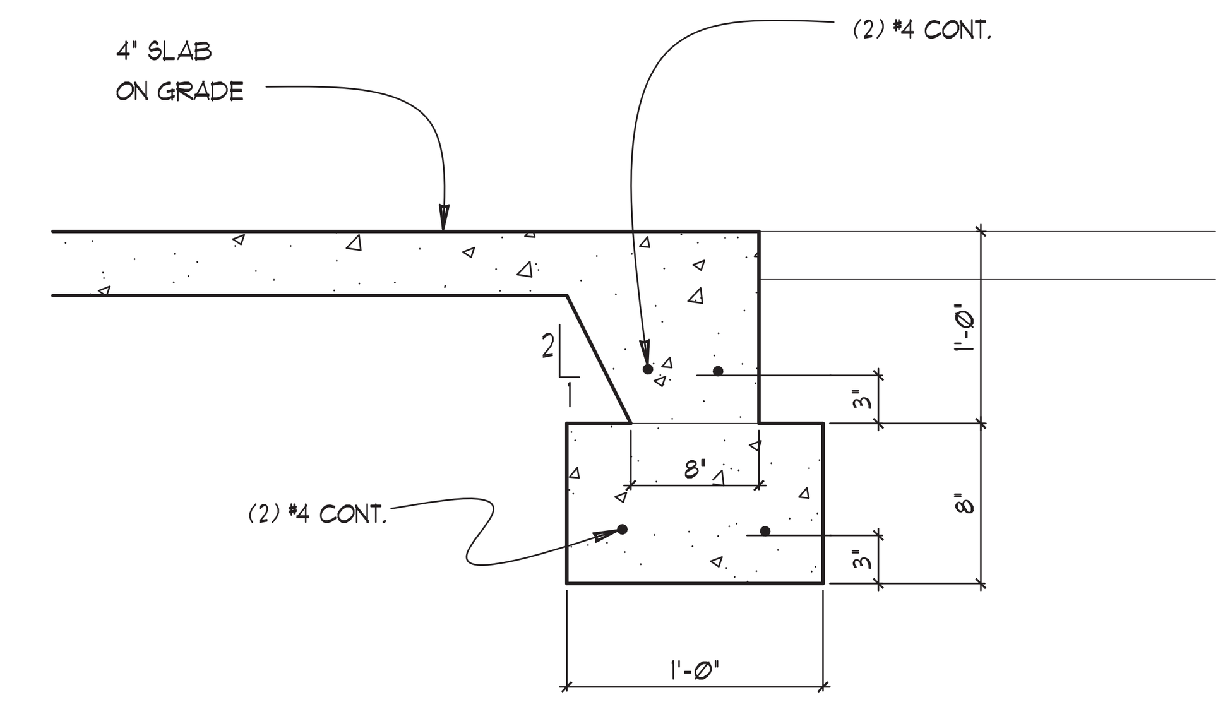

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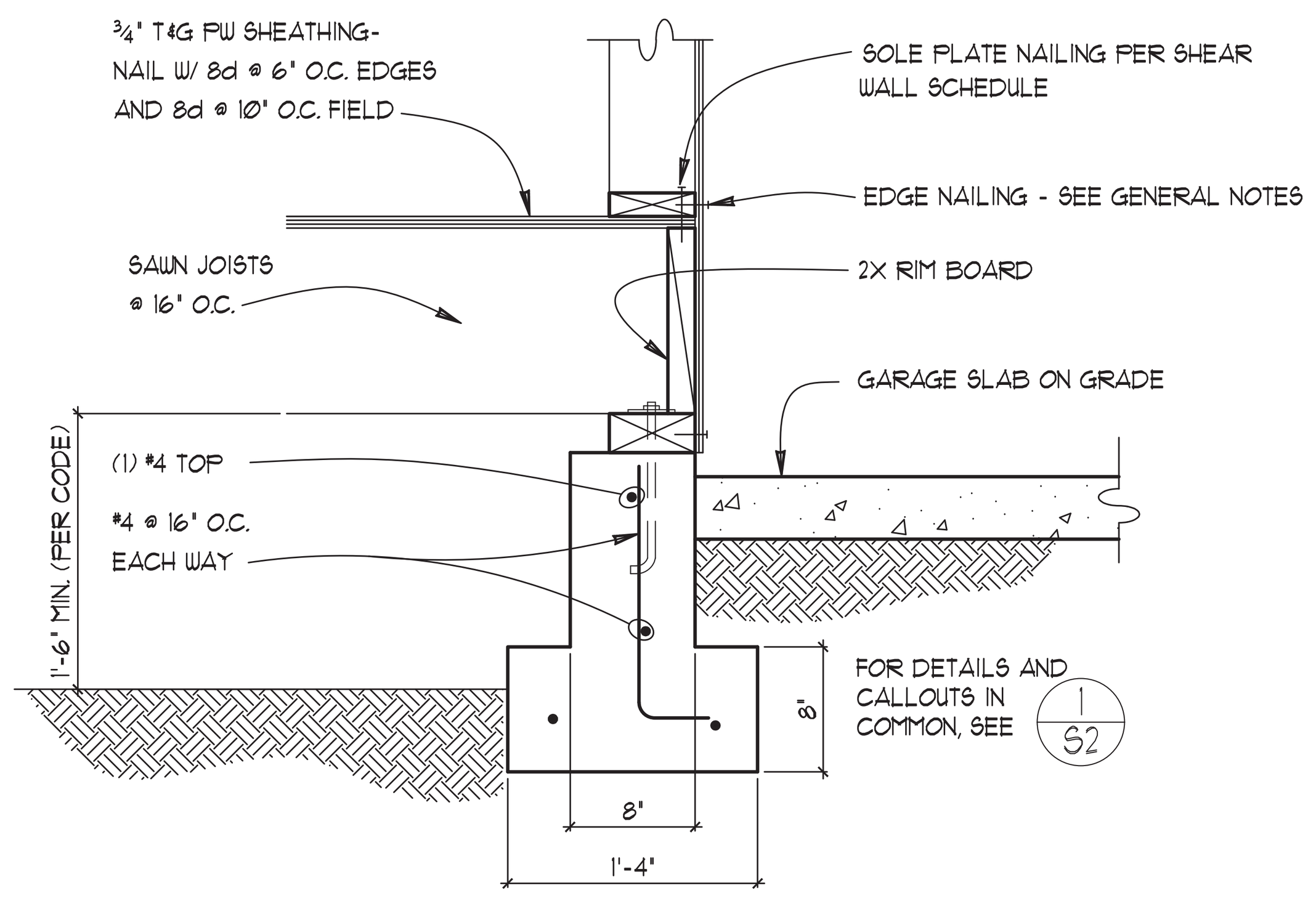

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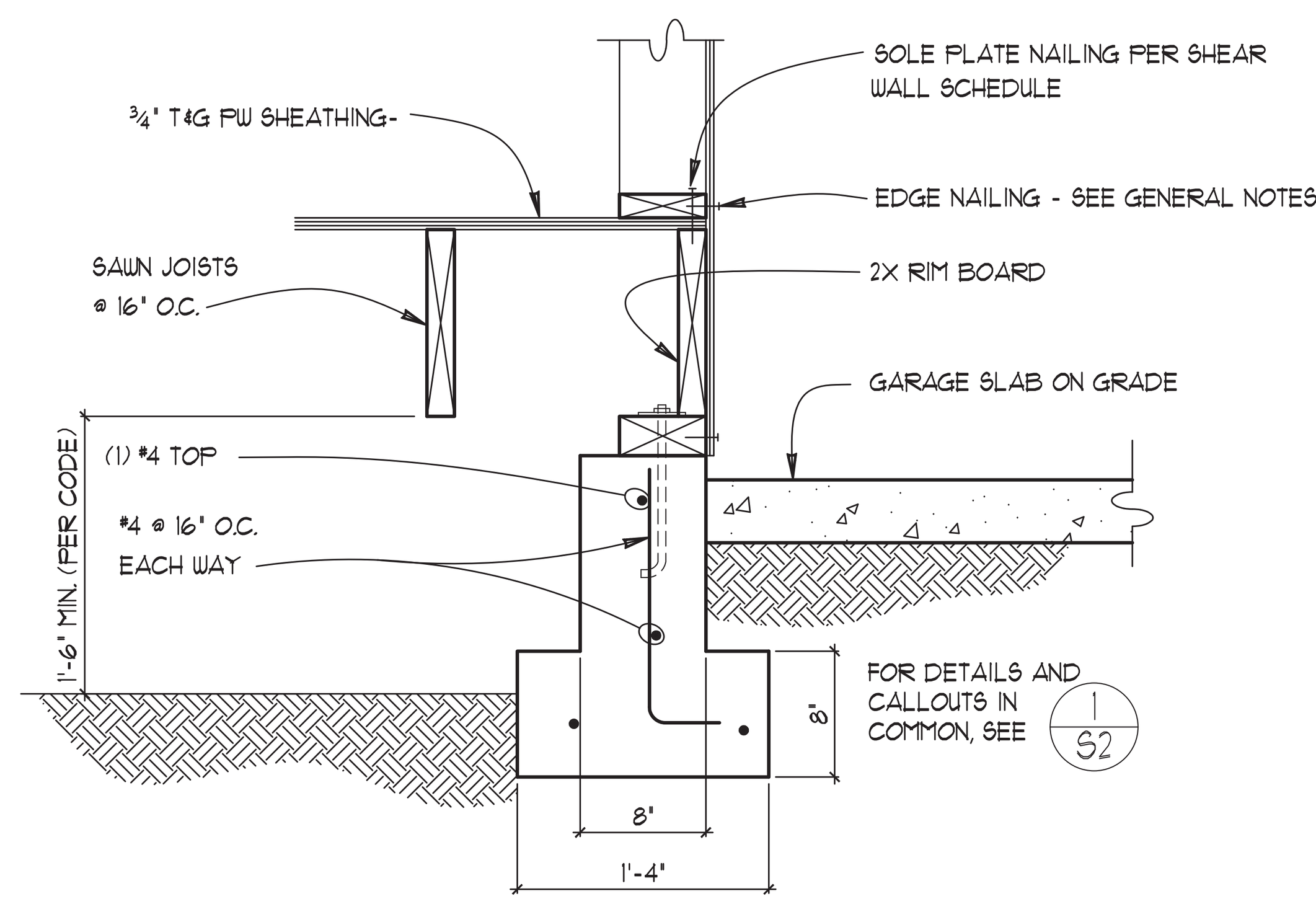

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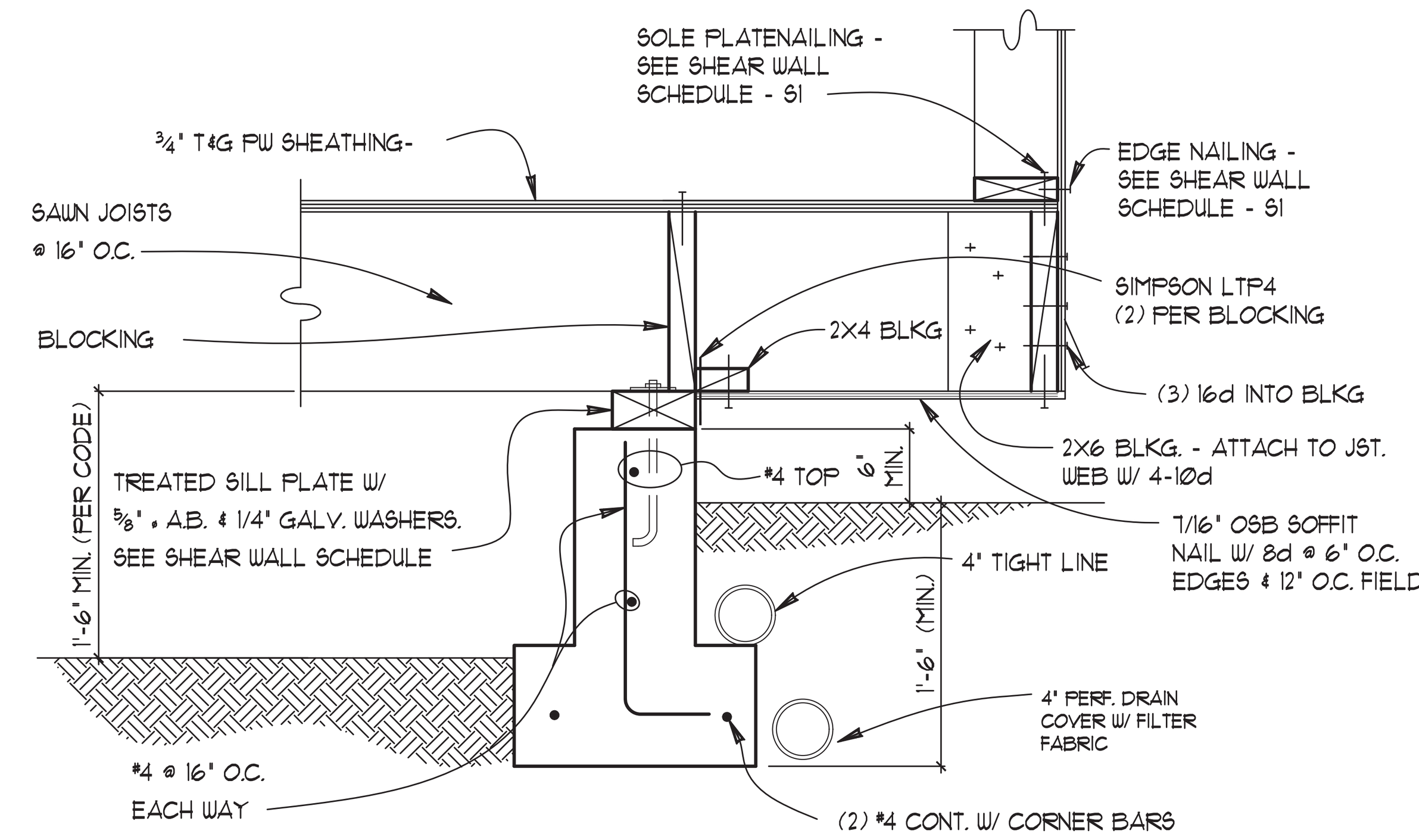

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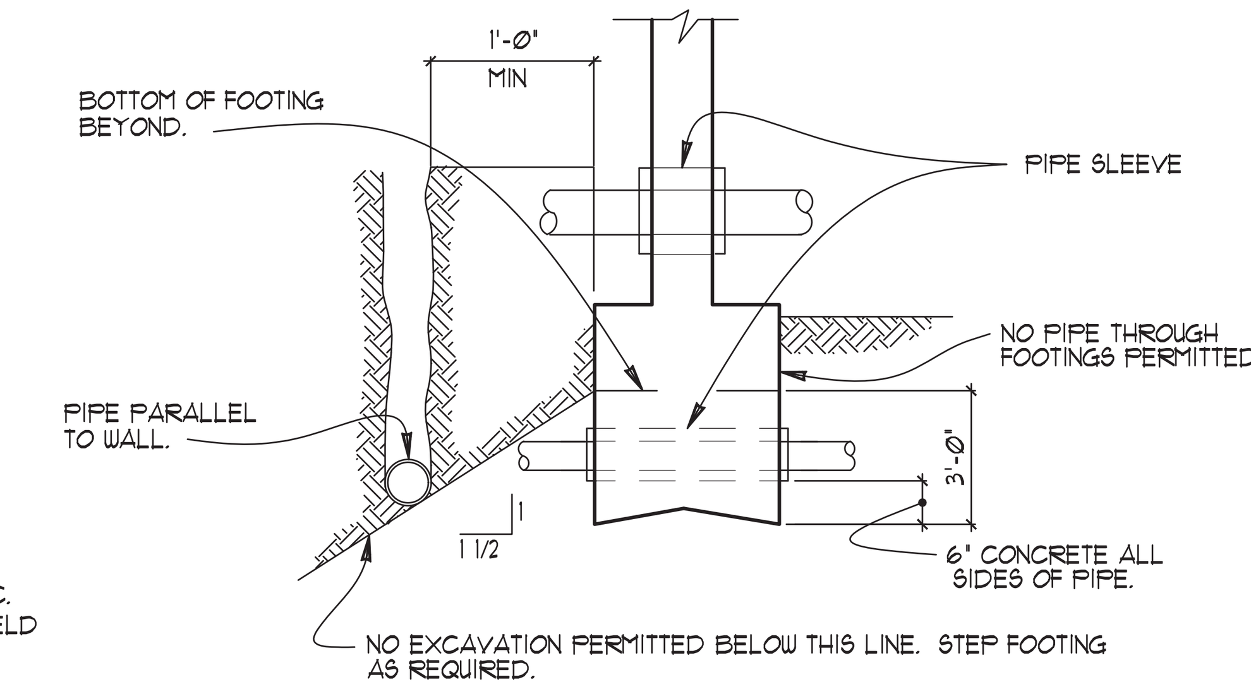
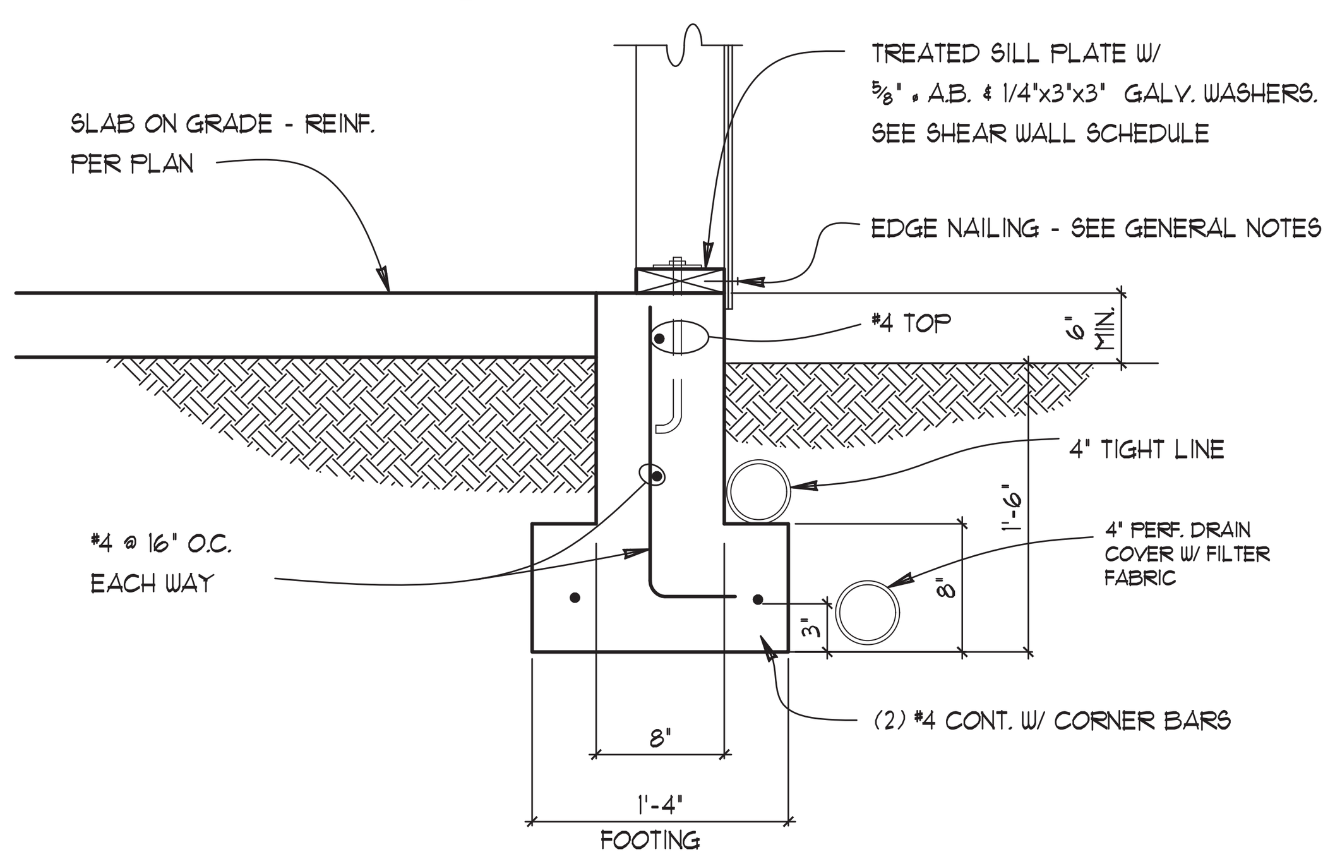


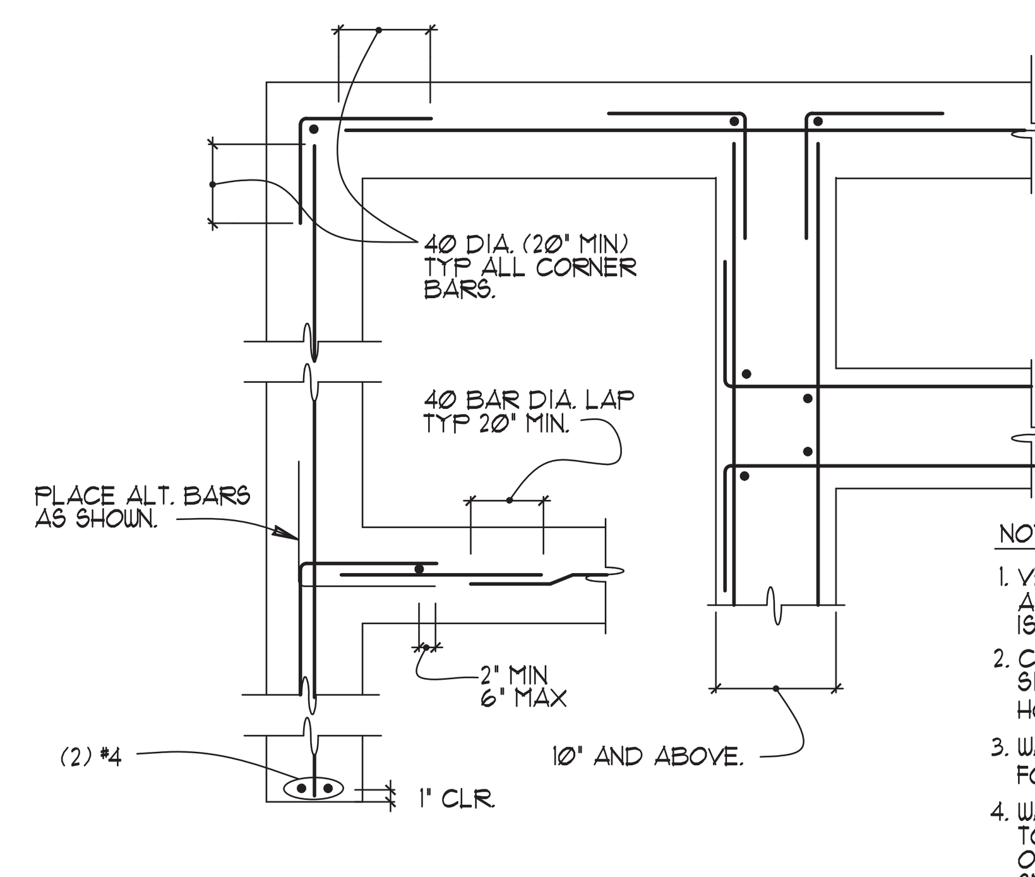
1. THIS DETAIL SHOWS PERMISSIBLE LOCATION OF PIPES OR EXCAVATION.
2. FOR PIPES GREATER THAN 3'-0" BELOW FOOTING, BACKFILL TRENCH WITH STRUCTURAL BACKFILL.

TYPICAL DETAIL OF PIPE AT CONCRETE FOOTINGS

8 SECTION
1" = 1'-0"



9 SECTION
1" = 1'-0"

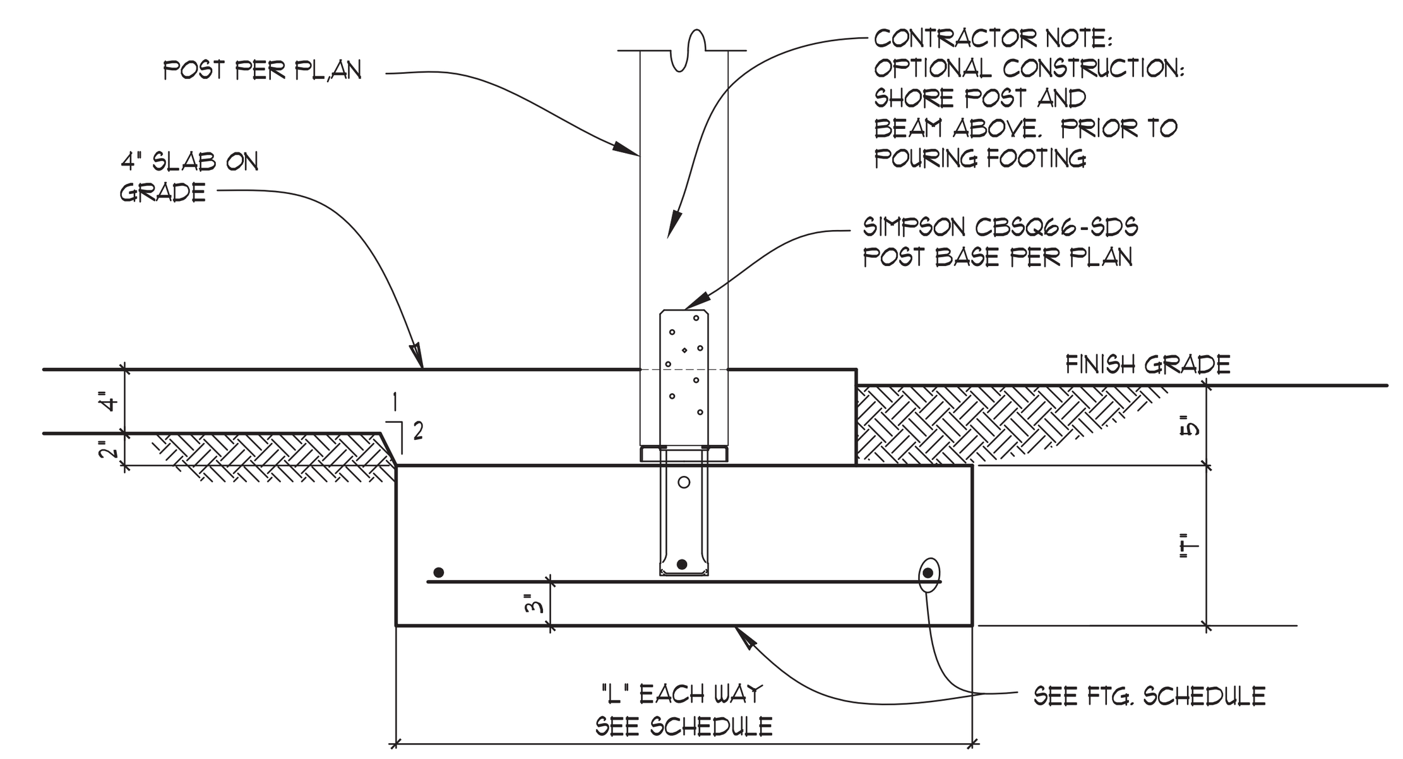


NOTES:

1. VERT. REINF. SHOWN IS ADD'L. IF NORMAL WALL REINF IS NOT IN PROPER LOCATION.
2. CORNER BARS ARE SAME SIZE AND SPACING AS HORIZ REINF.
3. WALL DETAILS SHOWN. FOOTING DETAILS SIM.
4. WALLS THICKER THAN 8" TO HAVE DOUBLE MAT. OF REINF. & 8" AND SMALLER, USE SINGLE MAT.

TYPICAL REINFORCEMENT PLACING PLAN FOR CONCRETE WALLS

10 SECTION
1" = 1'-0"



11 SECTION
1" = 1'-0"

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Contents
FOUNDATION DETAILS

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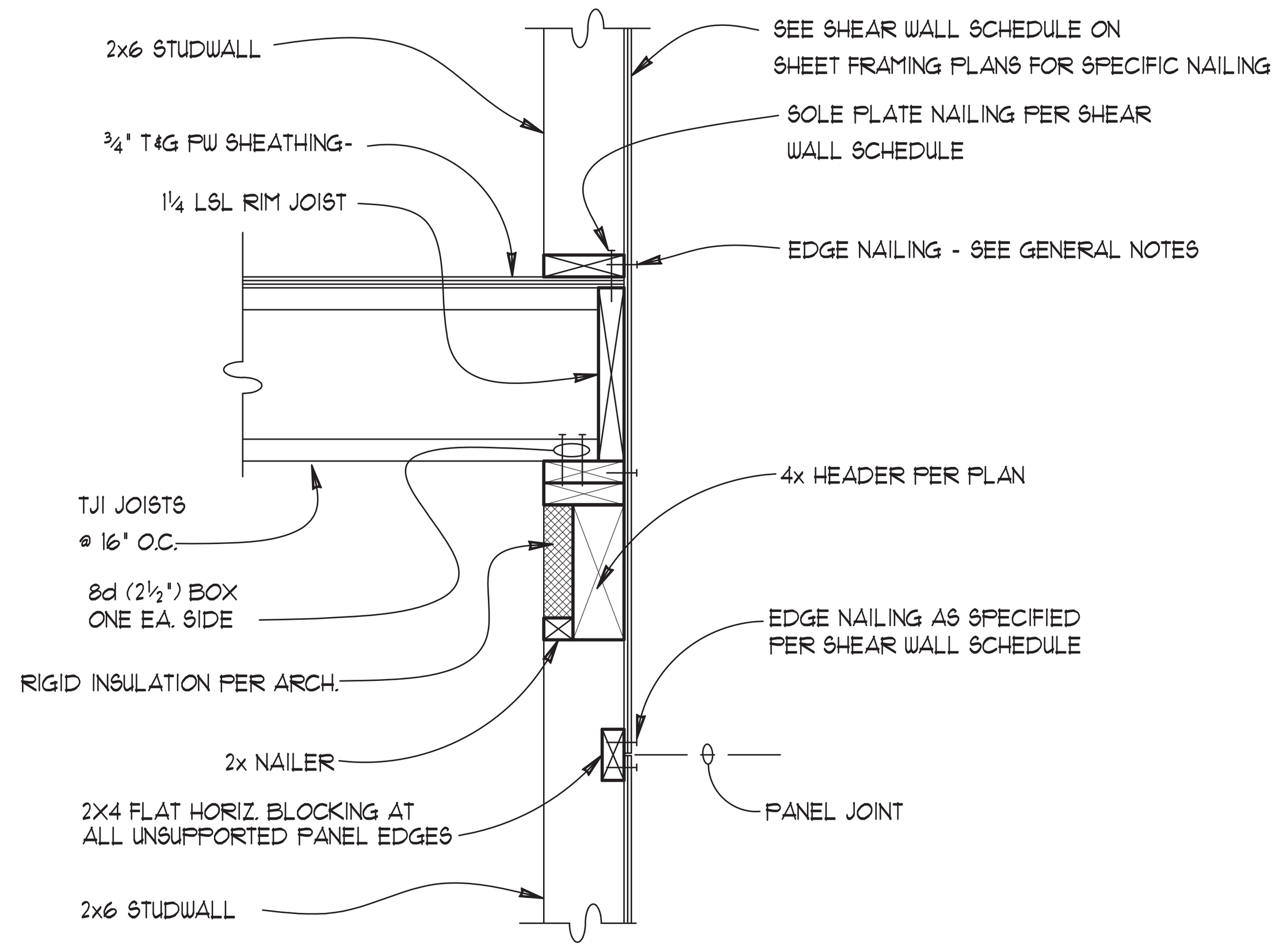
REV. DATE:	COMMENTS:

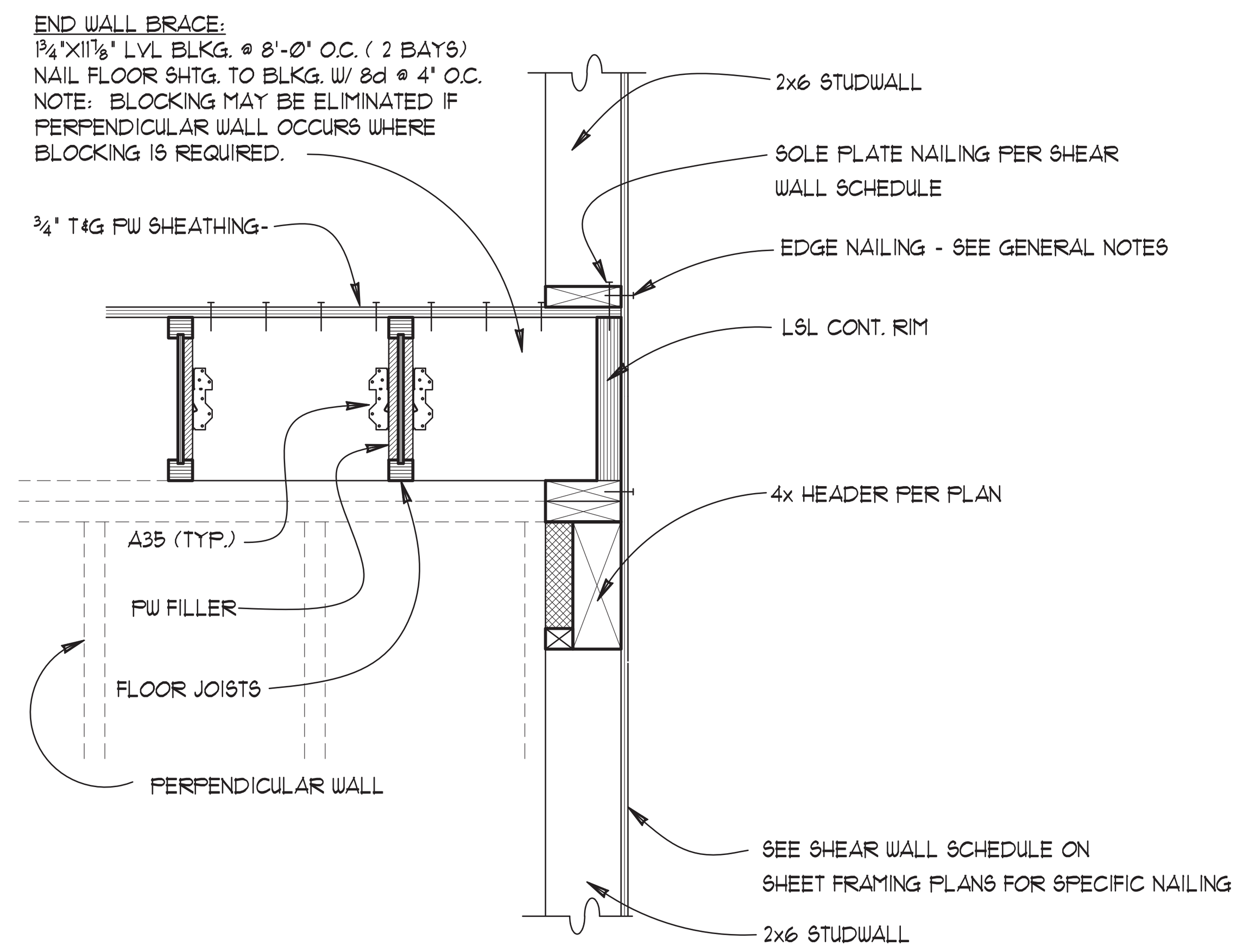
PLOT DATE: 06/15/2022

Project #: 12022

Sheet S2



1 SECTION
1" = 1'-0"



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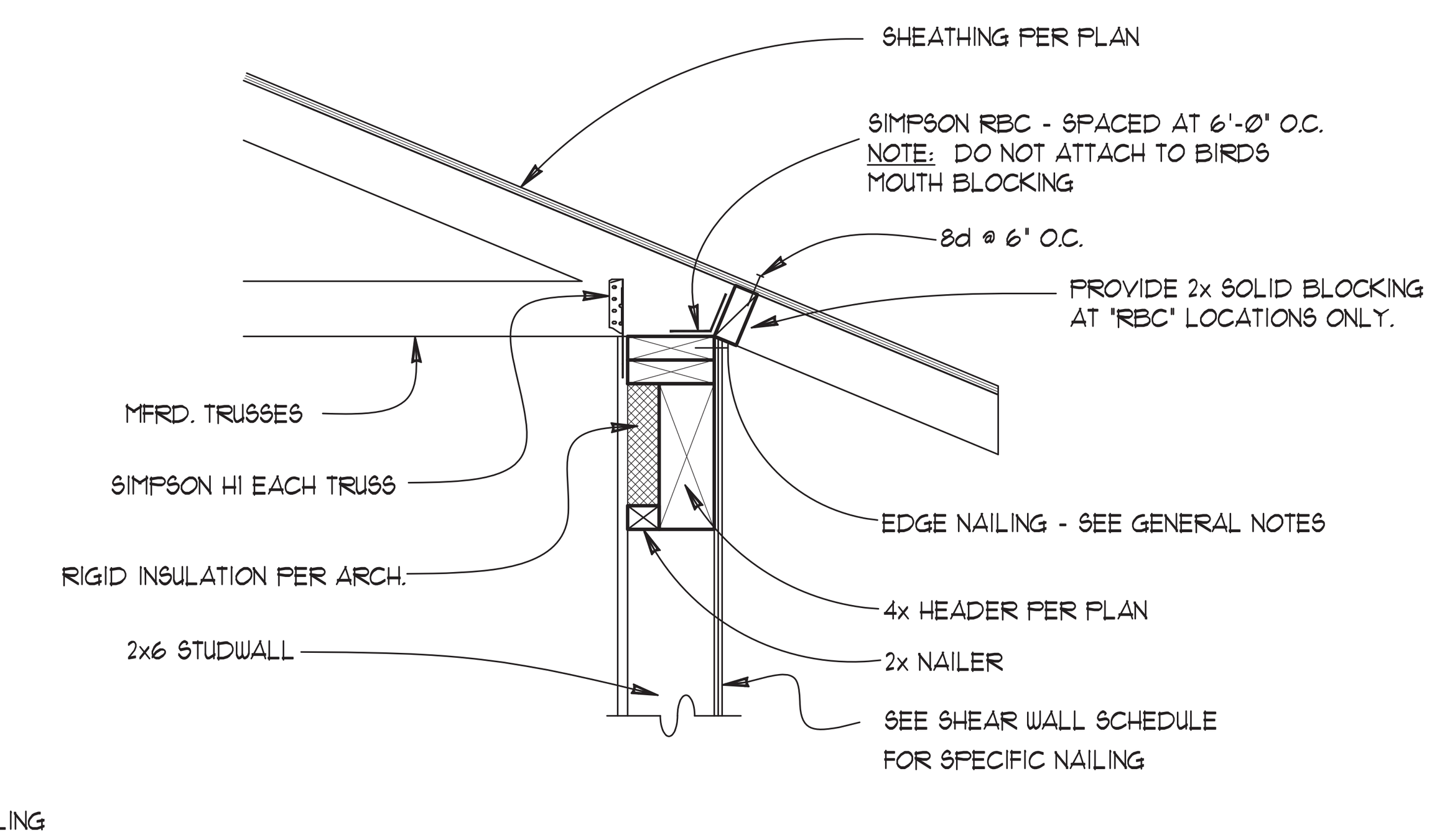

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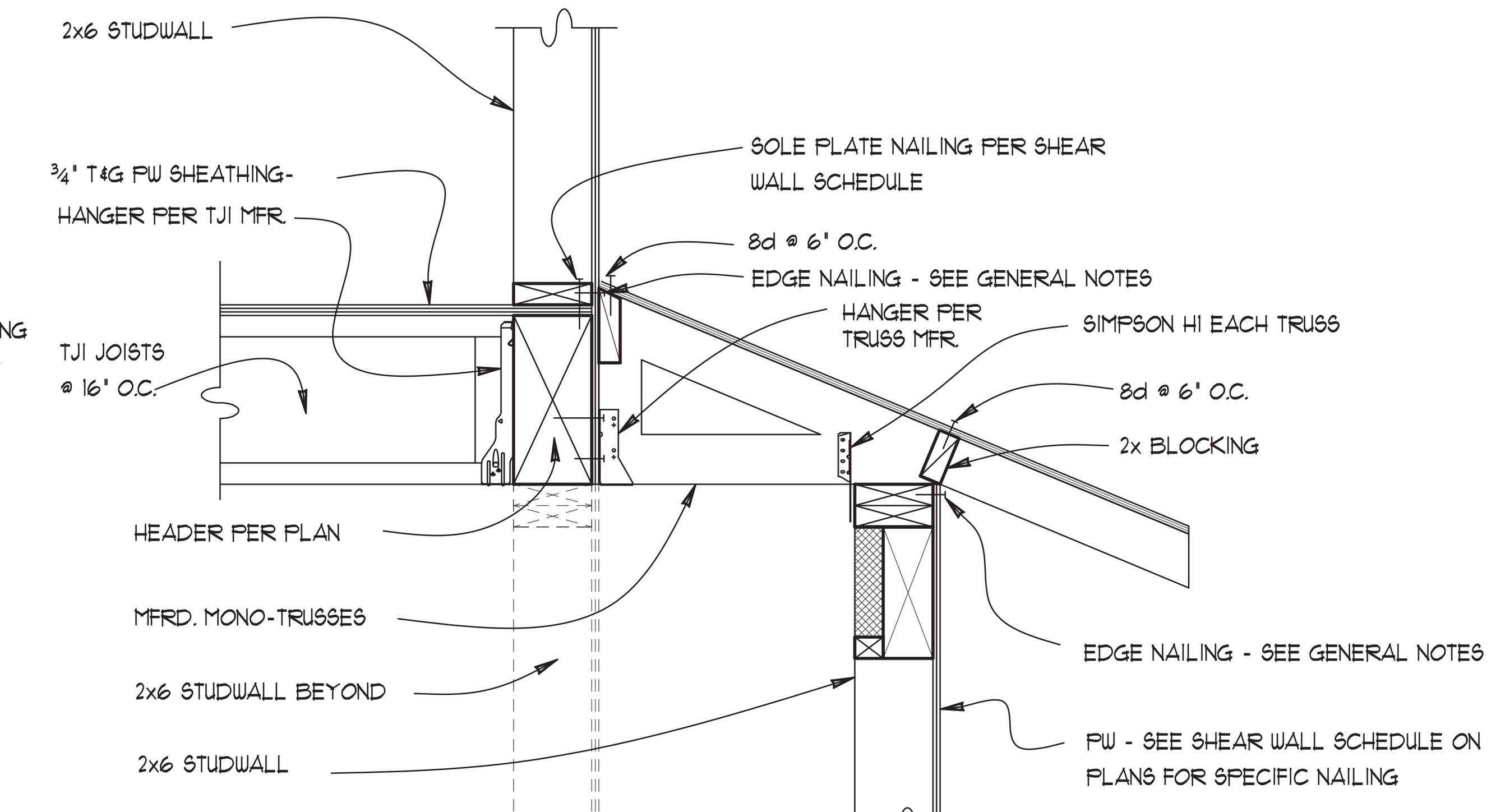

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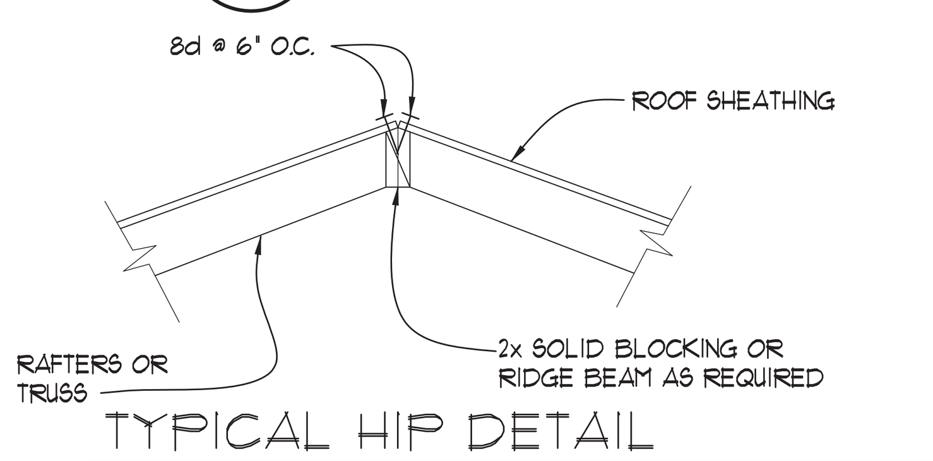
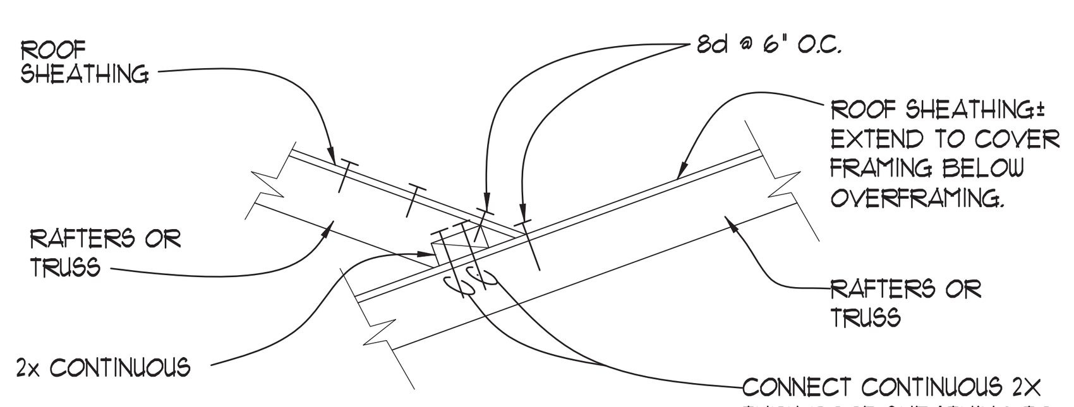
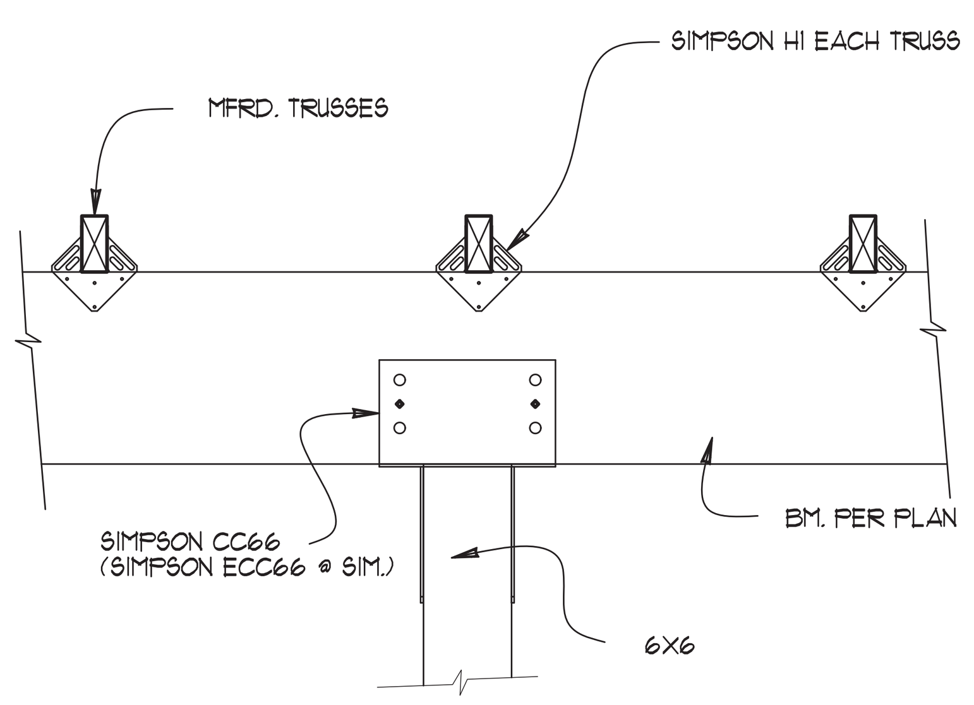


TYPICAL HIP DETAIL

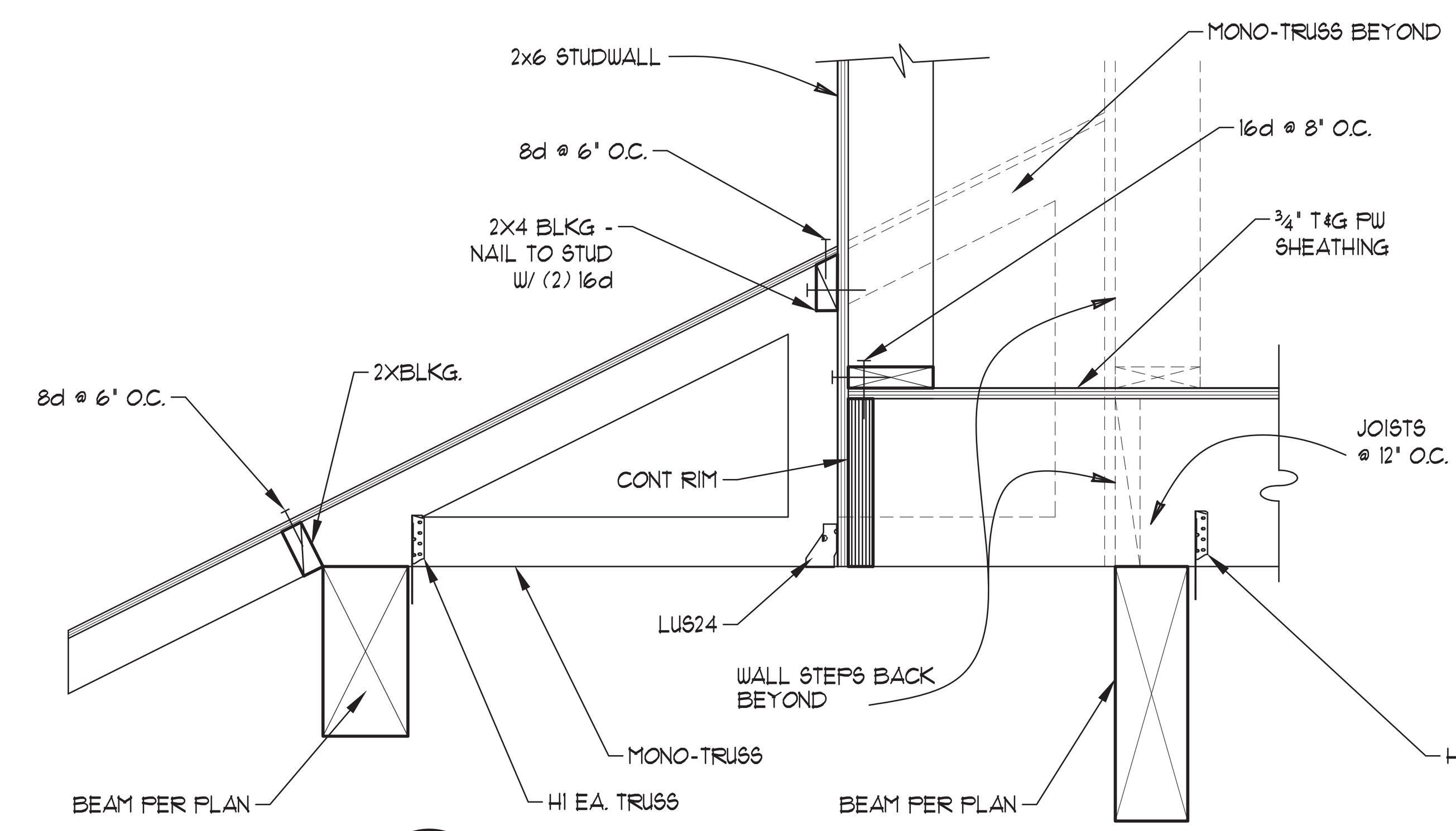


VALLEY DETAIL

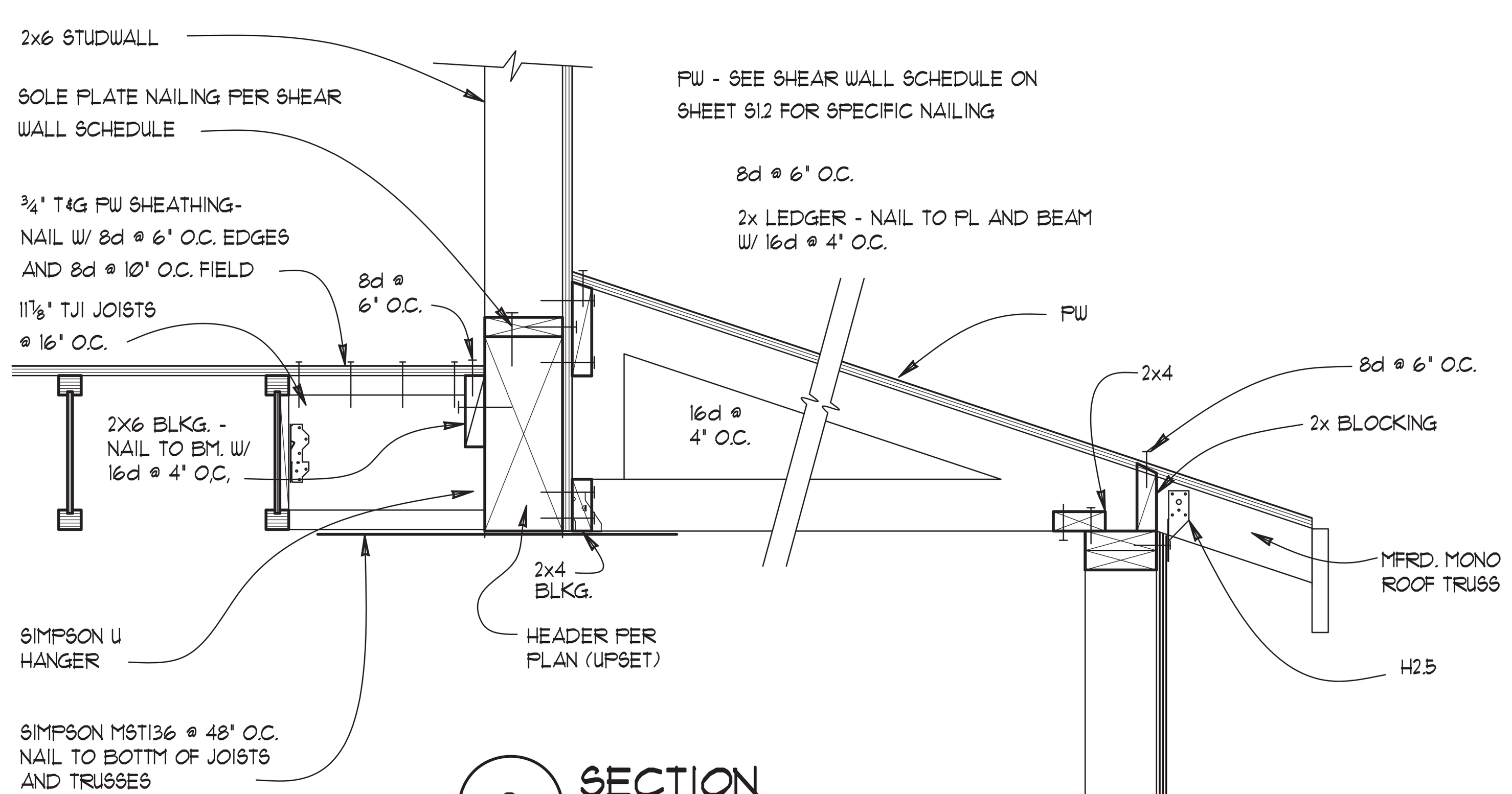
5 SECTION
1" = 1'-0"



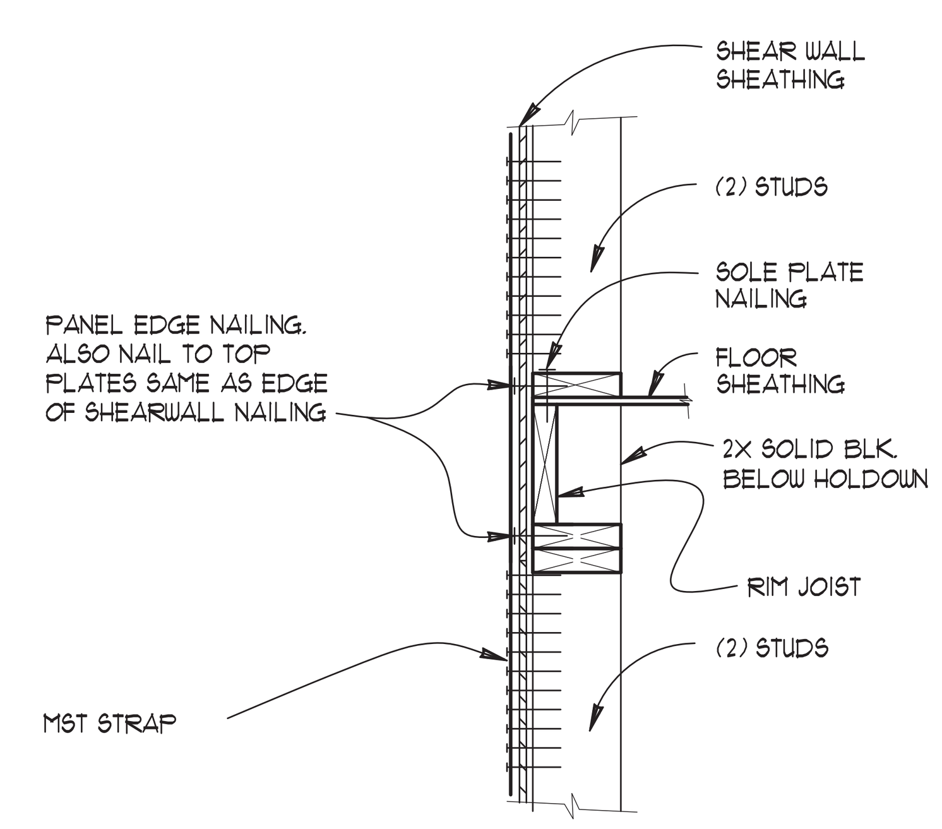
6 SECTION
1" = 1'-0"



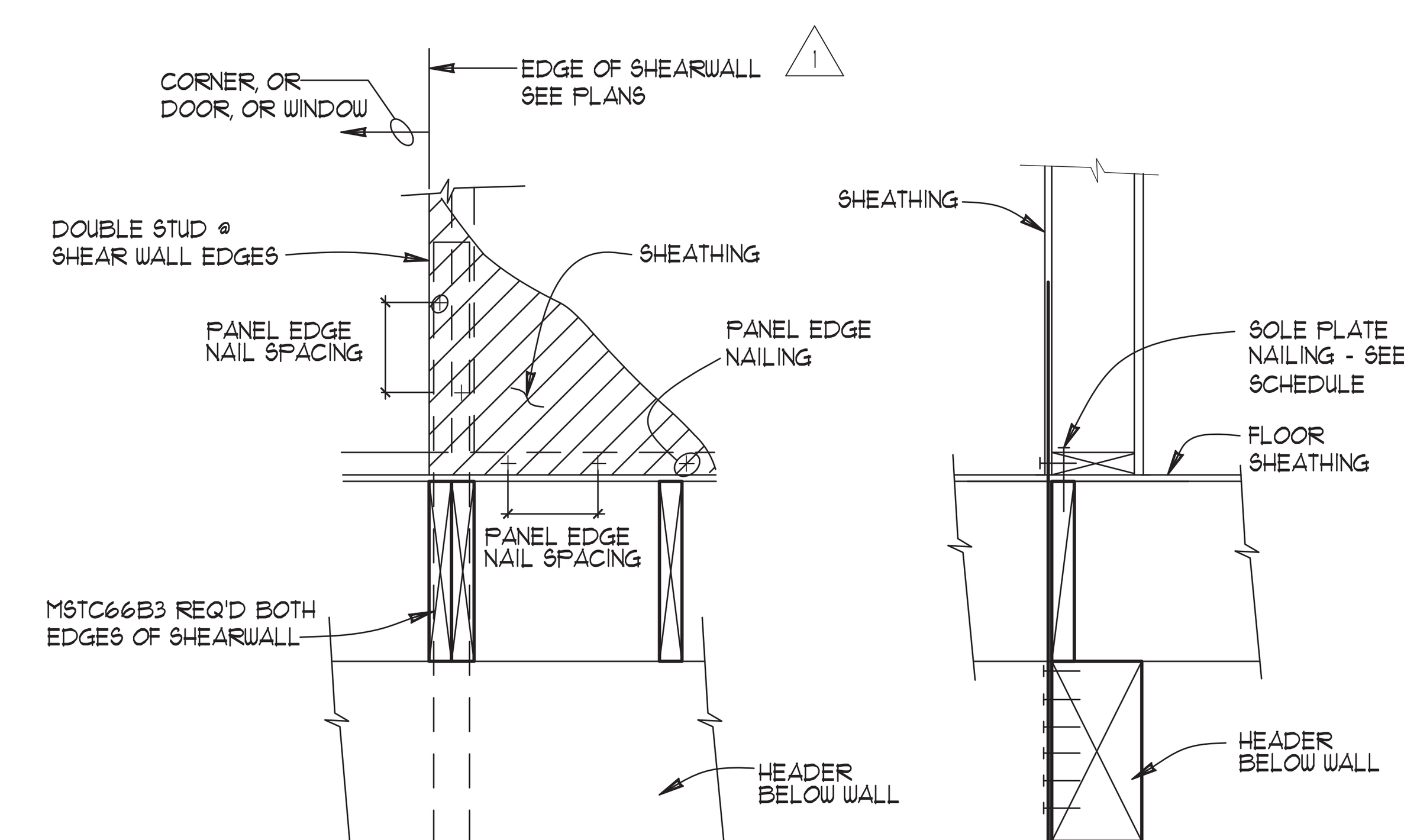
7 SECTION
1" = 1'-0"



9 SECTION
1" = 1'-0"



C SHEAR WALL DETAIL W/ SIMPSON MST STRAP HOLDOWN (PER PLAN)
1"=1'-0"



J DETAIL - MSTC AT BEAM
1½"=1'-0"

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Contents
FRAMING DETAILS

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Sheet
S3

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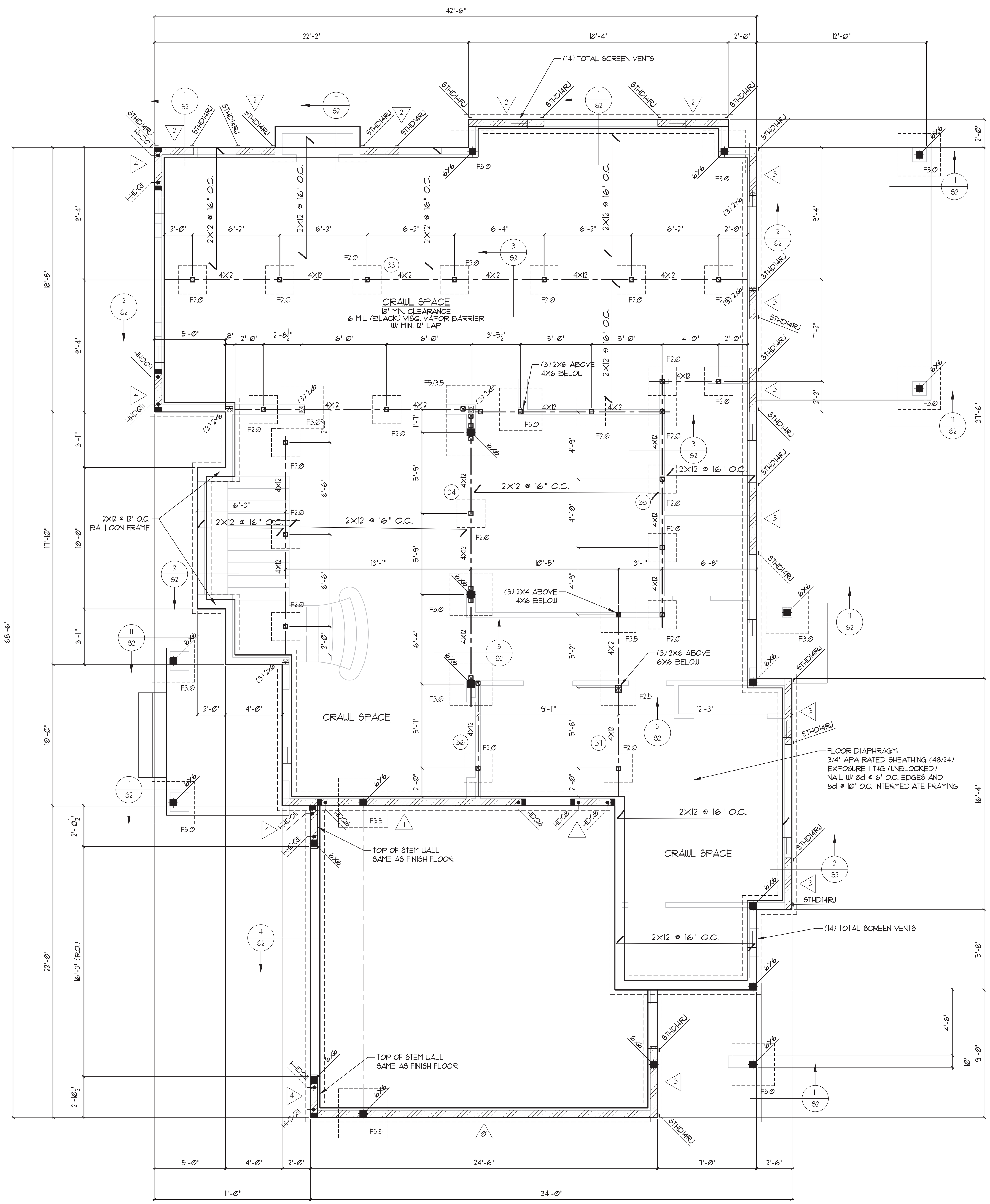

FOUNDATION / MAIN FLOOR FRAMING PLAN

1/4" = 1'-0"

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

FOUNDATION VENTILATION:

PROVIDE CRAWL SPACE VENTILATION AS PER IBC SEC. 1203.3.1
'CRAWLSPACE AREA' x 1/150 = TOTAL VENT AREA REQUIRED (S.F.)
QTY. OF 7"X14" VENTS REQUIRED: $\frac{2024\ SF}{(300 \times 0.520)} = 13$

FOUNDATION & MAIN FLOOR FRAMING NOTES:

1. ALL FLOOR BEAMS SHALL BE 4X10 DF #2 UNLESS NOTED OTHERWISE ON PLAN. NOTE LOCATE BEAMS UNDER BEARING WALL WHERE NOTED ON PLAN.
2. ALL FOOTINGS SHALL BEAR ON FIRM UNDISTURBED GLACIAL TILL OR STRUCTURAL FILL. SEE GENERAL NOTES FOR ASSUMED ALLOWABLE SOIL LATERAL OR VERTICAL BEARING PRESSURES.
3. THE BOTTOMS OF FOOTING EXCAVATIONS SHALL BE LEVEL, CLEAN, AND FREE OF LOOSE MATERIAL OR WATER WHEN CONCRETE IS PLACED. OVER EXCAVATION SHALL BE FILLED CONCRETE THE SAME STRENGTH AS FOOTINGS.
4. FINISH GRADE AROUND THE PERIMETER OF THE STRUCTURE SHALL BE DRAINED AWAY FROM THE FOUNDATION FOR RAIN OR IRRIGATION WATER
5. THE CONTRACTOR SHALL FOLLOW THE AVAILABLE GEO-TECH. REPORT FOR THE RECOMMENDED SITE PREPARATIONS BEFORE CONSTRUCTING THE FOUNDATION.
6. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED WITH AN APPROVED PRESERVATIVE. ANY FIELD CUTS, NOTCHES, AND DRILLED HOLES SHALL BE RE-TREATED PER AWPAM4.
7. ALL FASTENERS & HARDWARE IN PRESSURE TREATED OR FIRE TREATED WOOD SHALL BE SIMPSON "ZMAX" (G185 HDG PER ASTM A653).
8. PROVIDE DOUBLE JOISTS OR BEAM (PER PLAN) BELOW SHEAR WALL PARALLEL TO TO JOISTS. NAIL WALL SOLE PLATE TO JOISTS OR BEAM PER SHEAR WALL SCHEDULE OR NOTE 8. OF SHEAR WALL SCHEDULE NOTES.
9. PROVIDE 5/8" DIA. GALV. ANCHOR BOLTS EMBED 7" MIN. IN CONCRETE. PROVIDE 1/4"X3"X3" GALVANIZED WASHERS AT EACH ANCHOR BOLT.
10. PROVIDE APPROPRIATE BLOCKOUT IN STEM WALLS OR FOOTINGS FOR PLUMBING & ELECTRICAL STUB-OUTS PER ARCH. PLANS. COORDINATE WITH GENERAL CONTRACTOR.
11. PROVIDE CRAWL SPACE ACCESS PER IBC AND ARCHITECTURAL PLANS. COORDINATE LOCATION IN SITE WITH CONTRACTOR.
12. PROVIDE CRAWL SPACE VENTILATION PER IBC AND FOUNDATION PLANS. DO NOT LOCATE VENTS WITHIN 8" OF HOLDOWN STRAPS OR HOLDOWN BOLTS. MAINTAIN 3'-0" CLEAR FROM EACH CORNER.
13. FOR TYPICAL PLACEMENT OF HORIZONTAL REINF. IN CONCRETE, SEE 14/S2.
14. FOR TYPICAL DETAIL FOR INSTALLATION OF PIPES NEAR FOOTINGS, SEE 8/S2.
15. PROVIDE SQUASH BLOCKING BELOW ALL SOLID SAWN OR BUILT-UP 2X POSTS ALONG EXTERIOR OR INTERIOR STEM WALLS PER DETAIL 4/S1.

LEGEND

- INDICATES SPREAD FOOTING PER PLAN AND REINF. PER SCHDULE.
- INDICATES 6X6, 4X4, OR (X) 2X B.U. POSTS ORIGINATING AT THIS LEVEL AND SUPPORTING POINT LOADS FROM ABOVE.
- INDICATES SHEAR WALLS WITH HOLDOWNS OR FOUNDATION STRAPS PER PLAN. SEE SHEAR WALL SCHEDULE AND ELEVATION.
- INDICATES BEAM MARK NUMBERS PER PLAN AND STRUCTURAL CALCULATIONS.
- INDICATES 4X4 POST BELOW CONT. FLOOR BEAMS OR 4X6 POSTS AT FLOOR BEAM SPLICE. (TYP.)
- INDICATES ROUND OR SQUARE SPREAD FOOTING PER PLAN AND SCHEDULE.
- INDICATES 3/4" T&G PLYWOOD - NAIL WITH 8d @ 6" O.C. EDGES AND 8d @ 10" O.C. AT INTERMEDIATE FRAMING MEMBERS
- INDICATES MULTIPLE 2X6 B.U. POSTS OR SOLID POST BEARING ON BEAM AT THIS LEVEL AND SUPPORTING POINT LOADS FROM ABOVE.

BEAM PER PLAN

FOOTING SCHEDULE (1500 PSF BRG.) f'c = 2500 psi

TYPE	DIMENSION (INCHES) "L"	"W"	THK.	REINF. LONGIT.	TRANSV.	ALLOWABLE LOAD (KIPS)
F2.0	24"	24"	10"	(3) #4	(3) #4	5.5 K
R	24" DIA.		10"	(2) #4	(2) #4	4.3 K
F3.0	36"	36"	10"	(3) #4	(3) #4	12.4 K
F3.5	42"	42"	12"	(3) #4	(3) #4	16.5 K
F4.0	48"	48"	12"	(3) #5	(3) #5	21.6 K
F5.0	60"	60"	14"	(6) #5	(6) #5	33.5 K

SPREAD FOOTING DETAIL

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Contents
FOUNDATION - FLOOR FRAMING

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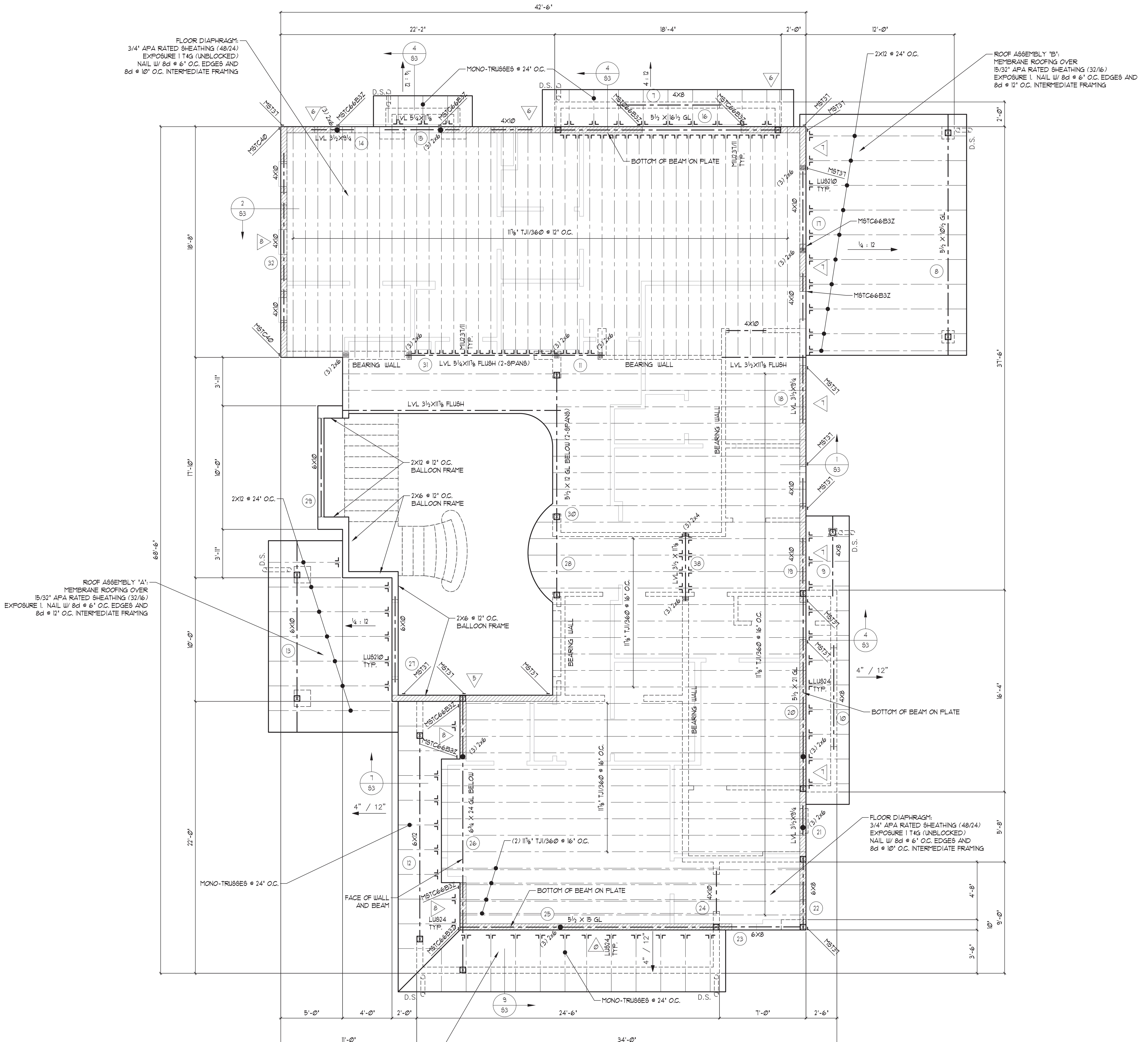
Sheet
S4



ROOF ASSEMBLY "A":
MEMBRANE ROOFING OVER
15/32" APA RATED SHEATHING (32/16)
EXPOSURE 1. NAIL W/ 8d @ 6" O.C. EDGES AND
8d @ 12" O.C. INTERMEDIATE FRAMING

UPPER FLOOR FRAMING PLAN

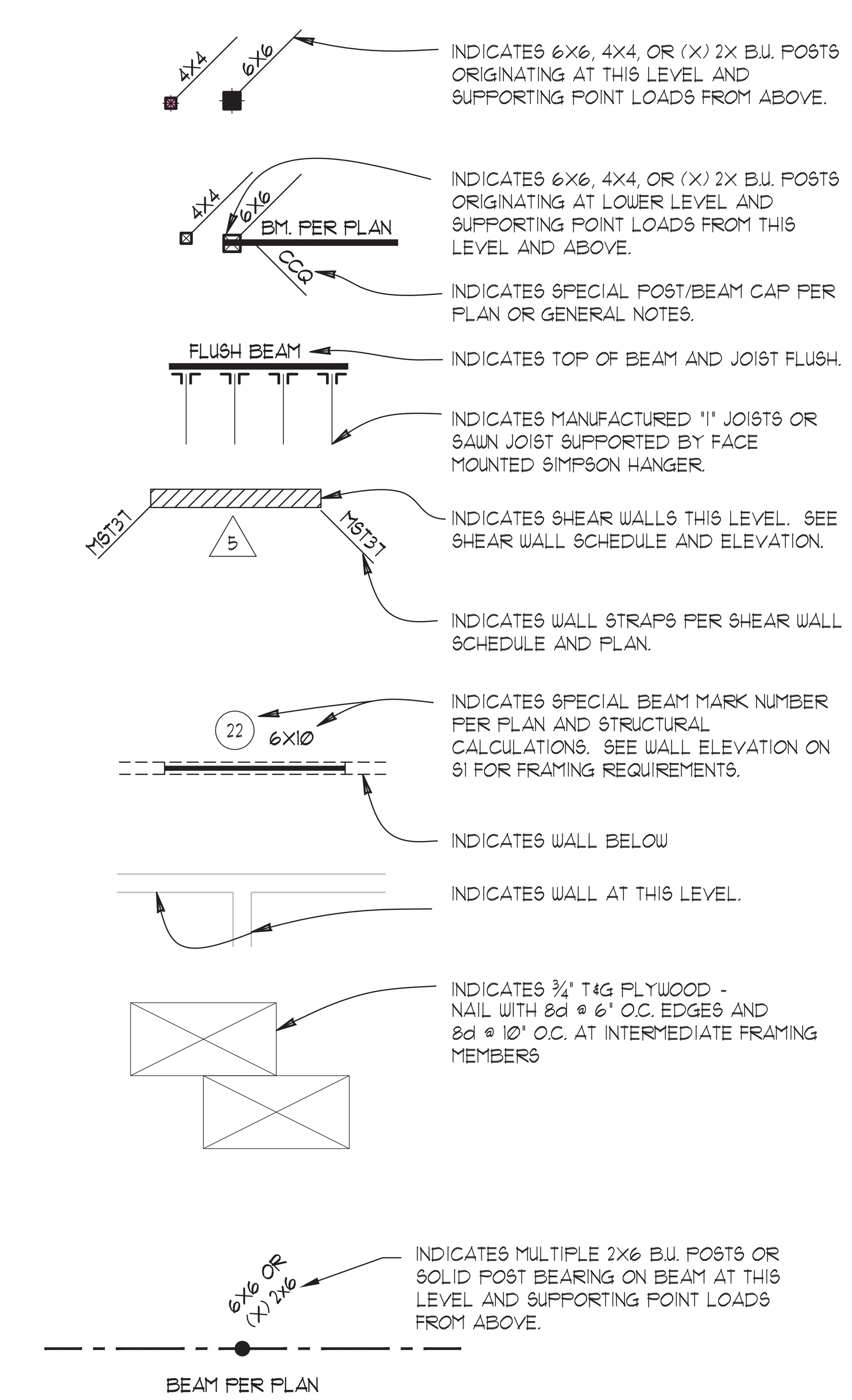
1/4" = 1'-0"

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

FLOOR FRAMING NOTES:

1. ALL EXTERIOR HEADERS SHALL BE 6X10 DF#2 UNLESS NOTED OTHERWISE ON PLAN. ALL INTERIOR HEADERS SHALL BE 4X10 DF#2 UNLESS NOTED OTHERWISE.
2. ALL EXTERIOR WALL STUDS SHALL BE 2X6 HEM-FIR #2 SPACED AT 16" O.C. UNLESS NOTED OTHERWISE ON PLAN. ALL INTERIOR WALL STUDS SHALL BE 2X4 HEM FIR #2 SPACED AT 16" O.C. UNLESS NOTED OTHERWISE.
3. FOR TYPICAL WALL FRAMING OR SHEAR WALL FRAMING SEE ELEVATION ON SHEET S1.
4. PROVIDE SOLID BLOCKING BELOW BEARING WALL OR SHEAR WALL PERPENDICULAR TO JOISTS. NAIL SOLE WALL SOLE PLATE TO BLOCKING PER SHEAR WALL SCHEDULE OR NOTE 8. OR SHEAR WALL SCHEDULE NOTES.
5. PROVIDE DOUBLE JOISTS OR BEAM (PER PLAN) BELOW SHEAR WALL PARALLEL TO TO JOISTS. NAIL WALL SOLE PLATE TO JOISTS OR BEAM PER SHEAR WALL SCHEDULE OR NOTE 10. OF SHEAR WALL SCHEDULE NOTES.
6. PROVIDE JOIST BRIDGING PER JOIST MFR'S RECOMMENDATIONS.
7. PROVIDE SOLID 2X OR LVL RIM JOIST AT EXTERIOR WALL PER DETAIL AND PLAN. NAIL WALL SOLE PLATE TO RIM WITH PER SHEAR WALL SCHEDULE OR NOTE 10. OF SHEAR WALL SCHEDULE NOTES.
8. FOR JOIST CONNECTION TO FLUSH OR UPSET BEAM ON ONE OR TWO SIDES, SEE DETAIL 1/S1
9. FOR SOLID POST OR BUILT UP 2X POST BEARING ON EXTERIOR OR INTERIOR WALL, SEE DETAIL 3/S1.
10.
11. NAIL JOISTS TO BEARING WALL TOP PLATES OR TOP OF BEAM WITH (2) 10d TOE NAIL EACH SIDE.
12. PROVIDE WEB STIFFENERS AT "I" JOIST BEARING PER MFR'S RECOMMENDATIONS.
13. NOTCHING IN "I" JOISTS NOT PERMITTED WITHOUT MFR'S APPROVAL.
14. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED WITH AN APPROVED PRESERVATIVE. ANY FIELD CUTS, NOTCHES, OR DRILLED HOLES SHALL BE RE-TREATED WITH AWPAM4.
15. ALL FASTENERS & HARDWARE IN PRESSURE TREATED WOOD OR FIRE-RETARDANT WOOD SHALL BE "ZMAX"(G185 HDG PER ASTM A653).

LEGEND



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Contents
UPPER FLOOR FRAMING

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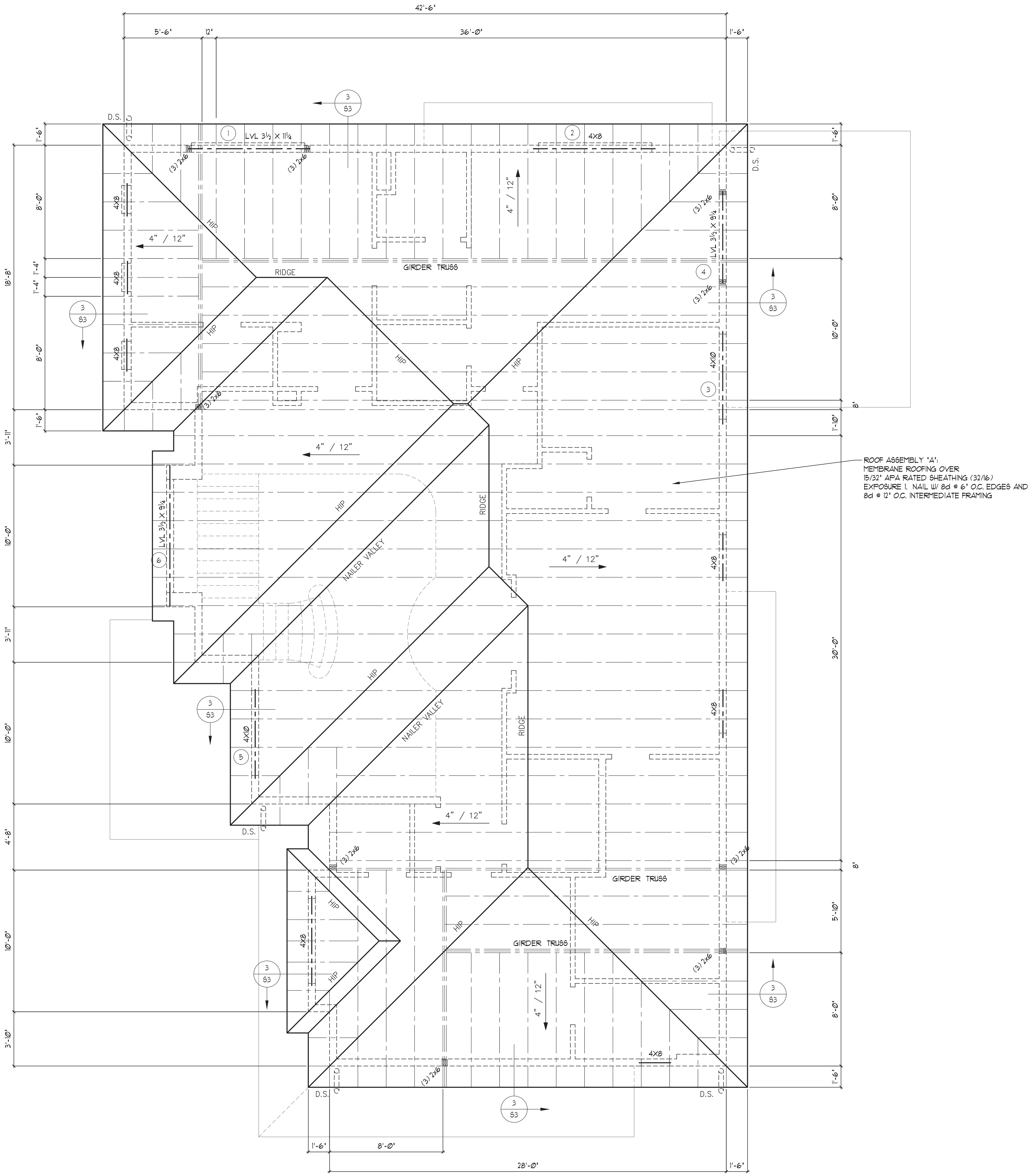
Sheet S5



ROOF FRAMING PLAN

1/4" = 1'-0"

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

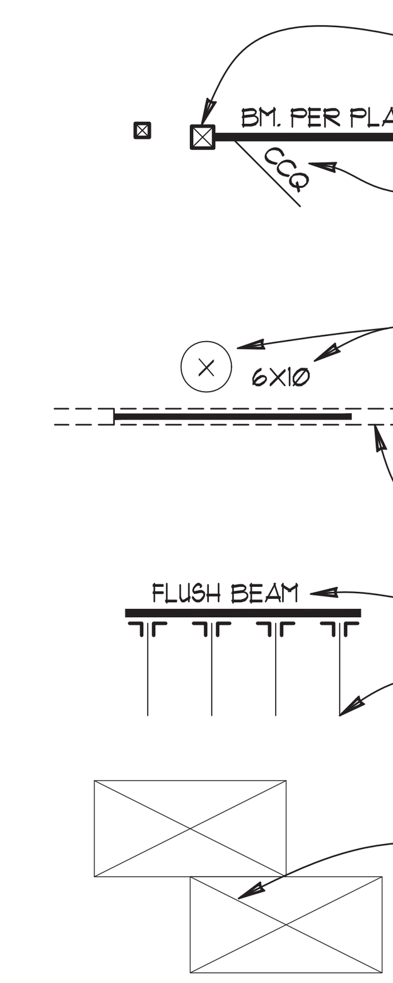
ROOF FRAMING NOTES:

1. ALL EXTERIOR HEADERS SHALL BE 6X8 DF#2 UNLESS NOTED OTHERWISE ON PLAN. ALL INTERIOR HEADERS SHALL BE 4X10 DF#2 UNLESS NOTED OTHERWISE ON PLAN.
2. SEE GENERAL NOTES AND TRUSS NOTES BELOW FOR TRUSS DESIGN SPECIFICATIONS.
3. ALL SAWN ROOF JOISTS SHALL BE HF#2 OR BETTER AND SPACED AT 24" O.C. UNLESS NOTED OTHERWISE.
4. PRE-MFRD. TJI JOISTS SHALL BE OF THE SIZE AND SERIES SPECIFIED ON THE PLAN. VERIFY MFRD, PLACEMENT PLAN WITH STRUCTURAL. NOTIFY THIS OFFICE OF ANY CONFLICTS IN LAYOUT BEFORE INSTALLATION.
5. PROVIDE ROOF VENTILATION PER CURRENT IRC OR IBC. SEE ARCHITECTURAL PLANS FOR SPECIFIC REQUIREMENTS.
6. PROVIDE ATTIC ACCESS PANEL PER CURRENT IRC, IBC, AND ARCHITECTURAL PLANS FOR SPECIFIC REQUIREMENTS.

WOOD TRUSSES (IBC 2303.4) SHALL BE:

1. DESIGNED PER IBC 2303.4.1.1 TO CARRY LOADS LISTED IN THE DESIGN CRITERION AND ANY ADDITIONAL POINT LOADS, UNIFORM LOADS, OR DRAG STRUT FORCES NOTED ON FRAMING PLANS.
2. NON-ATTIC STORAGE TRUSSES SHALL BE DESIGNED WITH A LIVE LOAD OF 20 PSF LOCATED IN THE PLANE OF THE TRUSS. THE MAXIMUM STORAGE SPACE ABOVE THE BOTTOM CHORD SHALL BE LESS THAN 42" HIGH AND 24" WIDE.
3. ATTIC TRUSSES SHALL BE DESIGNED FOR FLOOR LOADS LISTED IN THE DESIGN CRITERION AND LOCATED IN AREAS NOTED ON THE FRAMING PLANS.
4. TRUSS DESIGN DRAWINGS AND DOCUMENT SUBMITTAL (2303.4.1.1) SHALL INCLUDE STRESS ANALYSIS AND PICTORIAL DEPICTION OF EACH TRUSS TYPE FOR THE PROJECT AND INCLUDING A TRUSS PLACEMENT DIAGRAM (2303.4.2). TRUSS INSTALLATION DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER IN THE STATE OF WASHINGTON. APPROVED TRUSS DOCUMENTS SHALL REMAIN ON THE JOB SITE FOR INSPECTION.
5. ALTERATIONS (2303.4.5): TRUSS MEMBERS SHALL NOT BE NOTCHED, DRILLED, SPLICED, OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN APPROVAL OF THE TRUSS DESIGNER. ALTERATIONS RESULTING IN THE ADDITION OF LOADS TO ANY MEMBER (E.G. HVAC EQUIPMENT, PIPING, ETC.) SHALL NOT BE PERMITTED WITHOUT APPROVAL OF TRUSS DESIGNER.
6. TPI 1 SPECIFICATIONS: THE DESIGN, MANUFACTURE, FABRICATION, AND QUALITY ASSURANCE OF METAL-PLATE-CONNECTED WOOD TRUSSES SHALL BE IN ACCORDANCE WITH TPI 1.
7. TRUSSES SHALL BE BRACED TO MANUFACTURE'S SPECIFICATIONS.
8. UNLESS NOTED OTHERWISE ON PLANS, ALL TRUSSES SHALL HAVE SIMPSON H-1 CLIPS AT EXTERIOR BEARING WALLS. AT GABLE END TRUSSES, PROVIDE SIMPSON A35 AT 24" O.C.
9. PROVIDE STC CLIPS AT ALL TRUSSES OVER NON-BEARING WALLS.

LEGEND



- INDICATES 6X6, 4X4, OR (X) 2X B.U. POSTS ORIGINATING AT LOWER LEVEL AND SUPPORTING POINT LOADS FROM THIS LEVEL AND ABOVE.
- INDICATES SPECIAL POST/BEAM CAP PER PLAN OR GENERAL NOTES.
- INDICATES SPECIAL BEAM MARK NUMBER PER PLAN AND STRUCTURAL CALCULATIONS. SEE WALL ELEVATION ON S1 FOR FRAMING REQUIREMENTS.
- INDICATES WALL BELOW
- INDICATES TOP OF BEAM AND JOIST FLUSH.
- INDICATES MANUFACTURED TRUSSES OR SAWN JOIST SUPPORTED BY FACE MOUNTED SIMPSON HANGER.
- INDICATES 7/16" OSB SHEATHING - NAIL WITH 8d @ 6" O.C. EDGES AND 8d @ 12" O.C. AT INTERMEDIATE FRAMING MEMBERS (TYP.)

COORDINATION OF CONSTRUCTION, INCLUDING VERIFICATION OF DIMENSIONS & FIELD CONDITIONS, IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM PRIOR TO CONSTRUCTION.

CONTRACTOR NOTE:
REFER TO TRUSS MANUFACTURER DWG. FOR TRUSS LAYOUT AND TYPES. USE THIS DRAWING FOR LOCATION OF SPECIAL BEAM SIZES, GIRDER TRUSS AND BUILT-UP POST LOCATIONS.

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Sheet
S6